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APERIAM TERRAS GENTIBUS.



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THE
VOYAGE OF NEARCHUS

FROM THE INDUS TO THE EUPHRATES,

COLLECTED FROM THE
ORIGINAL JOURNAL PRESERVED BY ARRIAN,

AND ILLUSTRATED BY
AUTHORITIES ANCIENT AND MODERN;

CONTAINING
AN ACCOUNT OF THE FIRST NAVIGATION ATTEMPTED BY
EUROPEANS IN THE INDIAN OCEAN.

By WILLIAM VINCENT, D.D.

TO WHICH ARE ADDED

THREE DISSERTATIONS:

Two, on the ACRONYCHAL RISING of the PLEIADES,

By the Right Reverend Dr. SAMUEL HORSLEY, Lord Bishop of Rochester;

And by Mr. WILLIAM WALES, Master of the Royal Mathematical School in Christ's Hospital:

And ONE by Mr. DE LA ROCLETTE,

On the FIRST MERIDIAN of PTOLEMY.

Posteris an aliqua cura nostri, nescio, nos certè meremur ut sit aliqua, non dico ingenio
(id enim superbum) sed studio, sed labore, et reverentiâ posterorum.

PLINIUS, TACITO. Lib. ix. Ep. 14.

L O N D O N :

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VOYAGE OF THE "ALBATROSS"

FROM THE MOUTH OF THE RIVER

TO THE GULF OF CALIFORNIA

ORIGINAL JOURNAL OF THE

EXPEDITION

AUTHORISED BY THE

NAVY DEPARTMENT

AN ACCOUNT OF THE FIRST

EXPEDITION TO THE GULF OF CALIFORNIA

BY WILLIAM VINDEN, D.D.



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P R E F A C E.

IT is the privilege of an Author to avail himself of a Preface, in order to announce his design, to acknowledge obligations, and to anticipate objections.

I. On the first head, however, I shall be silent, the Work must speak for itself; and in the expression of my gratitude I shall confine myself, except in one instance, to personal communications; for all that is published is free ground, and to use it fairly is the best acknowledgment.

II. To Dr. Horsley, Bishop of Rochester, and to Mr. Wales, the companion of Cook, I am indebted for two Dissertations (which would do honour to any work) upon one of the most intricate questions of Chronology; and to Mr. de la Rochette for the solution of a geographical difficulty of no small importance. Dr. Russell, the historian of Aleppo, was my adviser in the few at-

tempts I have made upon Arabic etymology, and conferred a still greater favour by introducing me to a correspondence with Mr. Niebuhr, the best of modern travellers surviving. The information I received from him, indeed, related more immediately to another object than the one before us; but as a future opportunity may not offer, I seize the present with avidity to own my obligations. By Mr. Bryant I was favoured with a map which I could not otherwise have procured; and to Mr. Marsden, the historian of Sumatra, I am indebted for an introduction to Mr. Dalrymple.

Such are the favours I have received from literary friends, but to the Gentlemen in the service of the East India Company I have obligations of a different kind.

Major Rennell's Memoirs I have consulted upon all occasions, and if I have not profited by personal intercourse, the fault is mine. His civilities will not be erased from my mind; but I found that he was engaged in some geographical researches that interfered with a part of my own, and I held it neither just or honourable to ask for information upon a subject that he had already occupied. I have now only to hope that the result of our separate inquiries may essentially correspond, as, in
case

P R E F A C E.

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case of disagreement, his reputation as a geographer is established, and mine is only an expectancy.

From Mr. Jones, Resident for the Company at Busheer and Basra, I obtained much information in the space of a short interview; but he left London before I could prosecute my inquiries, and much to my regret; as I had promised myself great advantage from his intimate knowledge of the country and the language, and his intercourse with the people in power; circumstances which qualify him to give a better account of the present state of Persia than almost any other visitor of the East.

But Mr. Dalrymple demands the utmost tribute of my gratitude. I have had access to his whole collection published and unpublished, and his advice upon every question of doubt or difficulty. Two charts, composed under his direction, accompany the Voyage of Nearchus; and as one of them comprehends a part of the coast which, without his assistance, was inexplicable, a short account of the survey on which it is founded cannot be unacceptable.

In the year 1774, a little squadron was equipped at Bombay for the purpose of exploring the coast between
the

the Indus and the Gulph of Persia. It consisted of the following vessels :

Fox, Lieutenant Robinson, Commodore.

Dolphin, Lieutenant Porter.

A Patamar boat, in which Mr. Blair and Mr. Mascall, volunteers, were occasionally employed.

From the materials collected by these officers, Mr. Dalrymple constructed a chart, containing the Survey of Lieutenant Robinson, and accompanied it with a Memoir drawn up by Lieutenant Porter, which he prefaces with the following observation :

“ The coasts here described are so little known, that
“ every particular must be acceptable, *as we have*
“ *scarcely any account of them* since the time of Alex-
“ ander the Great.”

So perfectly true have I found this, that there is no one Author I have consulted whose relation is intelligible without the assistance of this Memoir; and if the Journal of Nearchus can now be presented to the Public with any degree of perspicuity, or any hope of affording pleasure, it is due to the liberal spirit of the East India Company, to the Presidency at Bombay, to the
I ability

ability of the officers employed upon the service, and to the use Mr. Dalrymple has made of their information.

Commodore Robinson is still living, and has favoured me with an interview, in which many of my difficulties were removed.

Captain Blair has in some measure assisted me in tracing the whole coast of Mekran which I describe, and, with a liberality congenial to his profession, has favoured me with a sketch of the coast at Cape Jask, which solves a geographical question left in obscurity by the ancient writers; and, previously to this attempt, undecided by the moderns¹.

The second chart, containing the Gulph of Persia, was of less difficult construction, from the ample supply of modern information in the possession of Mr. Dalrymple; but his chief reliance is fixed upon Lieutenant M'Cluer², another officer in the service of the East India

¹ Much will be said in the following *dual* during the moments he could allot without neglect of the common duties of an officer in the different vessels in which he served. It shews how much may be done in common voyages where diligence and ability are not wanting. Lieutenant M'Cluer had adopted a wild scheme of passing his days at the Pelew Islands, but has now abandoned it, and the Public may still hope for much nautical service from him.—NOTE by Mr. DALRYMPLE.

² The chart of the Gulph of Persia, by Lieutenant M'Cluer, was *not a public survey*, but the meritorious operation of an *individual*.

Company,

Company, and whom he regards as a navigator of extraordinary merit and abilities. The lower part of the gulph and the islands in it, as to their general position and bearings, have long been arranged, though perhaps with an inferior degree of accuracy; but the mouths of the Euphrates and the Tigris have never been so perfectly delineated, as by the hand of Mr. Dalrymple. Mr. d'Anville has laboured this point in an express Memoir upon the subject, to the full extent of that geographical learning of which he was so eminently possessed; but he had not the means of information, nor access to those sources which enabled Mr. Dalrymple to construct his chart. At the head of the gulph, and in the disposition of the channels of the Euphrates, Tigris, and Eulæus, Mr. d'Anville has been misled, from want of materials which have since been supplied by the publications of Niebuhr, and the investigation of our English navigators. To their labours Mr. Dalrymple is indebted for his singular accuracy, and I have had the satisfaction to find that Arrian is more consistent in proportion to every new light that has been obtained upon the subject.

III. With such assistance from others, more perhaps will be expected in the following Work than will be found. To this I have only to plead, that the utmost
diligence

diligence has been exerted, and the greatest attention has been paid to every source of information I could discover; nor am I sensible of neglecting any, unless something should lie concealed in the early accounts of the Portuguese upon their first arrival in India, but their language I do not understand, and the manuscript of *Reffende* in the British Museum is hardly legible, except to a native. I collected some positions from the charts and drawings in that Work, in which the coast of Mekran is better laid down than in any I have seen previous to Commodore Robinson's Survey. The Portuguese had a settlement at Guadel, and one or two others on the coast. Some of their accounts in Latin I have searched in vain; and *Oforius*, whom Dr. Robertson quotes with respect, I examined, but found his period was too early to avail me.

Some apology is requisite for the other Maps I have introduced. They are compiled from d'Anville, Rennell,

³ A few names occur in de Barros Ramusio's Collection, tom. i. p. 388; and I have by the Portuguese, p. 373. It appears from another part of his work also, vol. iii. p. 416, likewise examined the English translations of that the coast of Guadel and Sinde were a Manuel de Faria y Sousa (1695), and of Hernan Lopes de Castaneda (1582), with little part of the Portuguese settlements. Texeira I have not met with in English, success. Sousa mentions *Reffende*, vol. ii. though I am told there is a translation of his p. 294, and the plundering of Guadel travels.

and Dalrymple ; but they are the effort of one who never composed a Map before. The use of them is to connect the motions of the army with those of the fleet, and to explain the geography of Arrian ; but the introduction of them might have been spared, if I could have procured a small sheet Map of Mr. de la Rochette's, comprising all the conquests of Alexander. That, however, I was forced to decline, as the price exceeded my abilities.

I foresee likewise, that exception may be taken to the quantity of introductory matter, and to a variety of digressions and interruptions which will occur ; but for these I offer no apology. My purpose was not to translate Arrian, but to make him intelligible to an English reader, and to investigate a variety of subjects, historical, geographical, and commercial. The narrative has never yet been exhibited in a perspicuous form ; and even Dr. Campbell*, in his account of this Voyage, though he is the only writer who has comprehended the views and designs of Alexander, has, almost equally with his predecessors, neglected the reduction of ancient geography to the standard of modern inform-

* In Harris's Collection, vol. i. p. 400.

ation.

ation. I may perhaps have descended too much into minuteness on this subject, but I cannot repent it; my duty was to explain my author, and I wished to have the site of Kalama fixed as decidedly as that of Alexandria.

To a modern navigator I may appear to have disfigured my charts with ancient names, but I have not omitted the modern ones, nor neglected to mark the longitude and latitude of any cape or island of importance, from the latest observations; and much disappointment should I feel, if the critical inquiries which occur, should render the Work unacceptable to any intelligent officer who may hereafter visit these coasts. Every deduction made in the closet from a comparative view of former writers, ought to be subject to inquiries upon the spot. These I court, rather than decline; and if any navigator should make this Work the companion of his voyage, I shall be ready to retract any opinion, or correct any mistake, upon better information. Geography, of all sciences, profits most by the correction of errors.

The orthography I have adopted will be liable to the objections both of literary and nautical readers: I have only to request that it may not be imputed to a love of

singularity or affectation, but to principle; for I have discovered several relations by contemplating the native sounds of Greek orthography, and many more I am persuaded will occur to those who pursue their inquiries in the country. I write, for instance, Killoota, not Cilluta, because the latter comes to our ear, Silleuta; and the former is the true sound to the ear of a Greek. In modern names also I write Phoregh, and not Fohregh; because the Ph preserves the relation of Phooreh with Poora, which Arrian makes the capital of Gadrosia. In comparing Oriental names with European orthography, I wish every inquirer to notice, that P. B. T.^s and several others, are the same letter with the aspirate or without it; the distinction is made by a mark in many Eastern languages, as by a point in the Hebrew. A minute attention to this has led me to more discoveries than one.

In writing names familiar in our English charts, I prefer the most popular, but generally notice the variation either on the first mention of it, or occasionally as the usage occurs. Thus I adopt Busheer and Bombareek, as known to every English navigator, rather than Abu-

^s פ Ph. פ P. ב Bh. ב B. ת Th. ת T. and ב in Persic V. All the letters פ ב ת are liable to this fluctuation.

schæhr and Cohum-barick*, which Niebuhr pronounces to be the Oriental orthography. I agree, however, most cordially with Mr. Dalrymple, in allowing that every variation should be preserved till some established mode shall be fixed; and in no one instance can this fluctuation be more fully exemplified, than in the expression of the Persian ق Kaf. This letter our English navigators enounce as the soft G, writing Gidda or Jidda; but Michaelis asserts, that in the neighbourhood of the Gulph of Persia it is uttered like Tsch, and Niebuhr⁸ writes Dsj, as Dsjesira for Gesira. Even in Oriental fluctuation this sound becomes hard like our G, before A, O, or U; for Gesira passes into Ghesira, Gafira, and Gufera; and still farther into K and Ch⁹, as

* Mr. Niebuhr's orthography of this word is liable to objection, for Bundereek he writes Bunder-regh, and regh is sand. buhr. Voyage, tom. i. p. 57. Amsterd. edit.

⁷ Michaelis Extrait de Niebuhr, p. 19. Aux Environs du Golfe Persique on prononce ق Kaf comme tsch.

⁸ J'ai déjà remarqué . . . qu'il est difficile de bien orthographier dans sa propre langue, mais plus difficile encore dans une langue étrangère, . . . c'est ce que est cause que j'avois quelquefois orthographié tout différemment les noms des mêmes villages, suivant la prononciation de différens personnes. Nie-

And p. 74. Or si un écrivain Arabe a écrit différemment les mêmes noms, d'après la prononciation de plusieurs de ses compatriotes, le vrai Savant ne me saura pas mauvais gré, . . . que je n'ai pas voulu écrire moi-même les noms en caractères Arabes.

After these confessions, who can affect precision in writing Oriental names?

⁹ Michaelis writes Dschidda; Niebuhr, Dsjidda, for our English Jidda.

Ni les Grecs ni les Latins connoissent le son de sch en Allemand. Extrait, p. 31.

Dsjenk

Dsjenk into Kienk, Kenk, and Chienk ; under another form, by adhering to the D, it drops the sj, and becomes Denk and Tenk. It is thus that Pliny writes Jomanes, and Ptolemy, Diamuna, for Jumna, the river of Dehli, which falls into the Ganges. With this copious source of variation, (and numerous others that are attendant upon other letters,) surely Michaelis confines etymology within bounds far too narrow, when he insists upon the appearance of individual letters to establish a conformity. In my opinion, the ear is a better guide than the eye. What European, upon the first view of the Oriental Bukhetunnusre", would discover that the sound is familiar? It is by the ear only we find that, with the addition of a syllable, it is Nabuchodonozzer, the Nebuchadnezzar of the Scriptures. I wish not, however, to display the parade of research on this subject, for I have ventured little on etymology ; if I escape from reprehension on the score of orthography", it is sufficient.

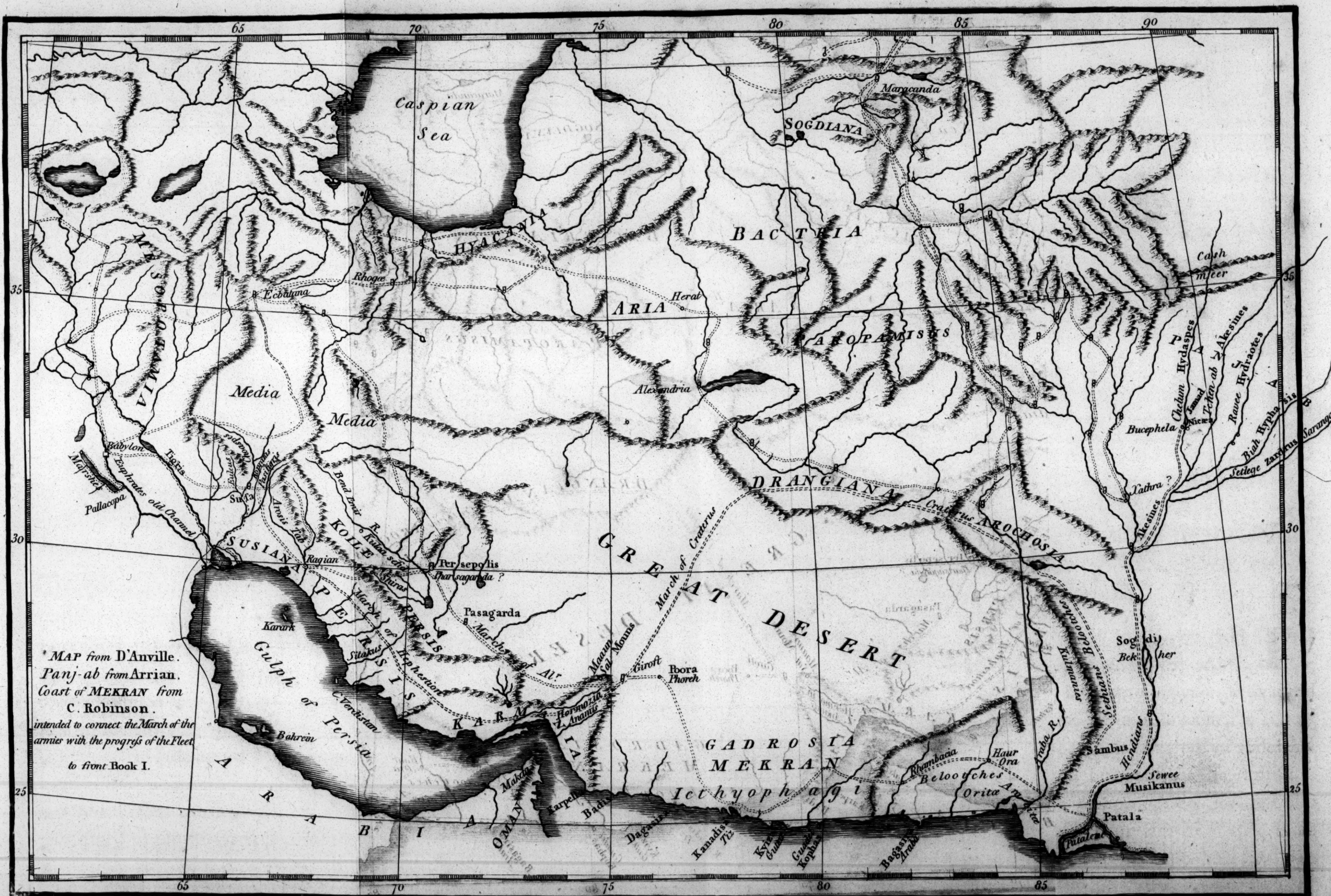
To accomplish the whole Work agreeably to my own satisfaction, a greater stock of geometrical knowledge and Oriental learning was necessary than has fallen to

" Otter, tom. i. p. 182. So the English write Ser-po-jeé for the Mahratta name Surra-botfchi.

" See on this subject, Ludolphus Abyssinia, book iv. c. 1.

my lot, and I now submit it to the Public, not without apprehension that it is as likely to offend by minuteness¹², as to please by arrangement and variety of investigation. It is, however, a Work compiled by the labour of many years, and perfected to the best of my abilities, and it now stands for judgment before a tribunal from which there is no appeal.

¹² Minute as I must sometimes appear, about Cape Louis and Cape François in the Right Reverend and judicious Editor of that island; though the coast of Melran is Cook's last Voyage will justify me by his at least as interesting, and as likely to be visited again, as that southern Thule. Neither example; for I have never spent the time upon an obscure place that he has upon his Lordship nor myself, I trust, deserve Kerguelen's land; and never been so anxious censure; but it is the taste of the reader which to clear a difficulty about a name, as he has must decide.



* MAP from D'Anville.
 Panj-ab from Arrian.
 Coast of MEKRA from
 C. Robinson.
 intended to connect the March of the
 armies with the progress of the Fleet
 to front Book I.



THE
VOYAGE
OF
NEARCHUS.

BOOK I.
PRELIMINARY DISQUISITIONS.

- I. *Introduction.*—II. *Character and Designs of Alexander.*—III. *Alexandria.*—IV. *Country at the Sources of the Indus.*—V. *Survey of the Empire.*—VI. *Geographers; Pliny, Ptolemy, d'Anville, Rennell.*—VII. *Dates.*—VIII. *Monsoons. Hippalus; Ptolemy; Marcian; Arrian, Author of the Periplus.*—IX. *Itinerary Measures.*—X. *Defence of the Authenticity of the Journal.*

THE voyage of Nearchus from the Indus to the Euphrates is the first event of general importance to mankind, in the history of navigation; and if we discover the comprehensive genius of Alexander in the conception of the design, the abilities of Nearchus in the execution of it are equally conspicuous.

Historical facts demand our attention in proportion to the interest we feel, or the consequences we derive from them; and the consequences of this voyage were such, that as, in the first instance,

it opened a communication between Europe and the most distant countries of Asia, so, at a later period, was it the source and origin of the Portuguese discoveries, the foundation of the greatest commercial system ever introduced into the world; and consequently the primary cause, however remote, of the British establishments in India.

The narrative of this voyage has been preserved to us by Arrian, who professes to give an extract from the journal of Nearchus; and notwithstanding its authenticity has been disputed (which is a question that will be fully discussed hereafter), we may venture to assert, that it presents to an unprejudiced mind every internal evidence of fidelity and truth.

It has been the peculiar felicity of Arrian to rise in estimation, in proportion to the degree of attention paid to the transactions he records. As our knowledge of India has increased, the accuracy of his historical researches has been established; and as the limits of geography have been extended, the exactness of his information has become daily more conspicuous, and the purity of the sources from whence he drew, more fully acknowledged.

In regard to the voyage of Nearchus, a mere translation of the work of Arrian would have given but a barren detail of names, with little satisfaction to the curious spirit of modern investigation, and would in fact have been superfluous: for translations of this narrative are to be found in Ramusio, Ablancourt, Rook, and Harris*. But it is the design of the following work, to consider the views of Alexander in the direction of this undertaking, to elucidate the course of Nearchus, and to identify the points in which ancient and modern geography coincide.

* The voyage of Nearchus is not in the original collection of Harris, but inserted in Dr. Campbell's edition of that work.

So far as concerns the passage down the Indus, and the navigation of the Gulph of Persia, this has been already performed by Major Rennell and Mr. d'Anville; but Major Rennell^{*} leaves Nearchus at the mouth of the Indus, and Mr. d'Anville[†] takes him up at the entrance of the Persian Gulph; the intermediate space they have both abandoned, as too obscure, or too uninteresting for investigation, though the merit of the commander depends upon the difficulties he surmounted in this part of his voyage more especially; and the clearing up of the geographical obscurity was an object worthy of the talents of two such masters in the science.

The lights they have afforded, in the parts they have executed, the positions they have established, and the difficulties they have removed, will be adopted in the following pages, without reserve; if at any time I dissent from either, or both of them, I shall do it with proper deference to their authority; and if I assume an opinion of my own, it is a privilege they have exercised successfully, and a privilege I have an equal right to claim, not originating in caprice, but in a long and studious contemplation of my subject. To Mr. Dalrymple I have already expressed my acknowledgments; but besides his assistance to this immediate work, I derive from his communication a variety of the most correct charts, plans and designs respecting both the coast of Mekran and the Gulph of Persia; and, above all, a collection of Memoirs and Extracts accompanied with his own observations, on which I rely with confidence for the solution of every difficulty.

^{*} Major Rennell, in his Memoir accompanying his Map of Hindostan.

in the 30th volume of the Memoirs of the Academy of Belles Lettres.

[†] Mr. d'Anville, in a Discourse contained

Such are the sources from whence I derive my information, and these, with the assistance of Tavernier, Otter, Pietro della Vallé, Thevenot, Sainte Croix, Cheref-eddin, Niebuhr, and the Ayeen Akbari, are the principal modern authorities upon which the following compilation is founded; the more ancient ones will be seen as they occur; and if the result upon the whole shall be, that the policy of Alexander in the design is as conspicuous as his felicity in the execution, the object of the work is completed.

ALEXANDER.

II. THE researches of modern historians and geographers have taught us to consider Alexander neither as an hero of chivalry on the one hand, nor as a destroying ravager on the other. We are no longer misled by the invectives of Seneca, or dazzled with the inflated declamation of Q. Curtius. As the writings of Arrian have become better known, the just standard of this illustrious character has been fixed: the rapidity of his success has appeared the result of prudence as well as valour, while his system of government and plans of empire have been found consistent with the soundest policy.

Previous to the expedition of the Macedonians, the empire of Persia had been invaded by Cimon the Athenian, and in a more recent period by the Lacedæmonians, under the command of Thymbron, Dercyllidas, and Agefilaus. The utmost extent of these several invasions was to waste the provinces, to support a Grecian army with the spoils of Asia, and to insult the great King in return for the calamities brought upon Greece by the expeditions of his predecessors.

But

But Alexander, from the moment he crossed the Hellespont, considered every country he subdued as a portion of his future empire. He never plundered a single province that submitted, he raised no contributions by extortion. From the battle of the Granicus, to the final defeat of Darius at Arbela, although he had overrun Asia Minor, Syria, and Egypt, the richest countries of the empire, his conquests were attended with no oppression of the people, no violation of the temples, no insult to religion. Order and regulation engaged his attention equally with the conduct of the war; his measures were taken with such prudence, that during eight years absence at the extremity of the East, no revolt of consequence occurred, and his settlement of Egypt was so judicious as to serve for a model to the Romans in their administration of that province at the distance of three centuries.

After the defeat of Darius at Arbela, the flight of that unfortunate monarch, and the pursuit of the usurper Bessus, led Alexander to Sogdiana, Bactria, and the northern provinces of the empire. The consequence naturally was, that when he determined to enter India, he found himself at the sources of the Indus.

The detail of his victories in the countries bordering on that river, is foreign to the present work, and will be no farther noticed than as it contributes to illustrate the progress of the fleet; we shall embark with Nearchus at Nicæa on the Hydaspes, and accompany him, assisted by the light of modern geography, till he delivered up his charge on the Pasitigris, within a few miles of Susa.

The completion of this voyage with the most perfect success, was intended only as a prelude to another, in which the circum-
navigation

navigation ⁴ of Arabia was to be attempted; already had Archias ⁵, Androtheneas, and Hiero been dispatched to explore the western side of the Gulph of Persia, and returned with an account of the progress they had made. Already had Nearchus actually embarked, and Alexander had anticipated the commercial intercourse between India and Alexandria, when a fever snatched him from the contemplation of still greater designs, in the thirty-third year of his life, and the thirteenth of his reign.

ALEXANDRIA.

III. It is perhaps imputing too much to the foresight of this extraordinary man, to assert that he had preconceived ⁶ this comprehensive scheme of commerce from the first foundation of Alexandria; but certain it is, that as his mind expanded with his success, and his information increased in proportion to the progress of his arms, the whole plan was matured in his mind before his death, and the execution of it nearly ascertained.

Whatever vanity is attached to the foundation of cities, and however this passion might operate upon Alexander, utility was still the prevailing motive in his mind. Harris ⁷ has judiciously observed, that most of the cities founded by the Syrian kings existed little longer than their founders; and perhaps, if we except Antioch on

⁴ A voyage by the Cape of Good Hope round Africa was also in his contemplation. See Ar. lib. v. p. 230. where he tells his army that his fleet shall sail round that continent to the Pillars of Hercules. It is a boast, however, rather than a plan.

⁵ See Ar. lib. vii. p. 301.

⁶ Montesquieu, speaking of the design of Alexander in founding Alexandria, says,

“ Il ne songeoit point à un commerce dont la découverte de la mer des Indes pouvoit seule lui faire naître la pensée.” *Esp. des Loix*, liv. xxi. c. 8.

⁷ Harris, vol. i. chap. 11. sect. 8.

the Orontes, and Seleucia on the Tigris, there was not one capable of existing: but the Paropamisian Alexandria⁸, and that on the Iaxartes⁹, continue to this day cities of importance; and the Alexandria of Egypt, after surviving the revolution of empires for eighteen centuries, perished at last only in consequence of a discovery which changed the whole system of commerce throughout the world. As this city was by the founder intended to be, and afterwards became, the center of communication between India and Europe, it will not be foreign to our purpose to introduce some particulars concerning it, as the voyage of Nearchus was the primary cause of its aggrandizement.

Surrounded⁹ on three sides by the sea, or the lake Mareotis, communicating with the Delta and Upper Egypt, by means of that lake and channels, either natural or artificial; protected on the north by the Pharos, between which and the main, Alexander had projected¹⁰, and the Ptolemies completed, a double¹¹ harbour; the situation of Alexandria presented every inducement to the view of the founder, comprehending the means of defence, and facility of access united in a single spot. These considerations, doubtless, determined the choice of Alexander; for the whole sea-coast from Pelusium to Canopus is low land, and not visible from a distance; the

⁸ Candahar is supposed, both by d'Anville and Rennell, to be the Alexandria of Paropamisus, and the tradition of the natives refers it to Scander. It is still the principal city of the country of the Abdalli, a kingdom which has risen out of the ruins of the Persian and Mogul empires. But see d'Anville's *Eclaircissements*, p. 19.

Cogend is determined to be the Alexandria on the Iaxartes by its position. See d'Anville *Geographie Ancienne*, tom. ii. p. 305.

⁹ See d'Anville on the Topography of Alexandria. *Mem. de l'Acad. & Geog. Anc.* tom. iii.

¹⁰ This design of Alexander is not hypothetical, for Hephaestion was to have had an Heroum in the Pharos, and his name was to have been inserted in all contracts between merchants. See *Ar. lib. vii.* p. 306.

¹¹ *Salmasius* says, "three ports." *Plin.* *Ex.* 479.

navigation along this coast, or approach to it, is always hazardous; the mouths, or Bogas ¹² (as they are called), of the Nile are at some seasons dangerous, even to a proverb; but the light-house on the Pharos, and the two harbours within it, obviated both these dangers; and Alexander, who knew the difficulty of approaching Egypt either by land or sea, eagerly seized on a situation which presented him with a post of the highest importance in a military view, and a harbour constantly accessible, at the same time.

These were sufficient motives for the foundation of the city; but as the views of the founder dilated with his better information, so the testimony of Arrian assures us, that from the time he had formed his fleet on the Indus, he meditated a passage by sea from that river to the Gulph of Arabia. He completed what he had conceived in the most dangerous part, and left little more to the Ptolemies than to fill up the outline he had drawn. Had he lived one year longer, he might have seen the barrier removed which obstructed the communication between Europe and the eastern world, and the commerce of both continents beginning to flow in the channel he had opened. He might have contemplated the dawn of that splendour which was to rise on Alexandria, and the source of that wealth which was to render her the first commercial city in the world.

The advantages derived to every country which has participated in the commerce of the East Indies, have been so fully displayed by Dr. Robertson, that there is no pretence for encroaching on his province; but that Alexander knew the value of this commerce, foresaw the consequences of it, and gave a direction to the course

¹² From *Bocca*, Italian, and probably introduced on the coast by the *Lingua Franca*. See Wood's *Essay on Homer*, p. 110. et seq.

in which it flowed for eighteen centuries, is a glory which even the more important discoveries of modern Europe cannot obliterate.

Of his knowledge, no greater proof can be required than what Major Rennell has produced, in that admirable Memoir which accompanies his Map of India; where, from the journal of Mr. Forster, he shews, that Alexander in his route from the Paropamisus to Taxila¹³, or Attock, actually trod the road¹⁴ which continues to this day to be the northern line of communication between Persia and Hindostan. This route he extended afterwards across all those streams which the Acesines or Chen-ab carries into the Indus, and terminated finally at the Hyphasis, or Biab.

COUNTRY at the SOURCES of the INDUS.

IV. THE province watered by these rivers, now denominated the Panje-ab, or five waters, is esteemed one of the richest provinces of the Mogul empire. When at the boundary of it, Alexander was not distant three hundred miles from the modern Dehly; and wherever we shall please to fix Palibothra, its distance cannot be so great as to preclude the knowledge of its name, its wealth, and importance, from the Macedonians.

In all ages, whenever the state of the country was sufficiently peaceable to admit of commerce, there appears to have been a great intercourse by means of the Indus, descending from Multan, Attock, Cabul, Cashmeer, to the coast of Malabar. Whether the

¹³ Taxila is usually considered by geographers as occupying the same site with Attock, but Arrian does not countenance this opinion.

He says, lib. v. p. 199, "That it was the principal city between the Indus and the Hydaspes." And in another passage, "Alexander marched from the Indus to Taxila;" an expression which implies distance.

¹⁴ Some allowance must be made for deviations, in consequence of the situation of the tribes he subdued.

vessels navigated on the river were capable of undertaking the voyage to the coast, or transferred their cargoes at Pattala into larger vessels, may be questioned; but the communication itself is evident. The trade which came down the river naturally took its course, rather to the rich provinces of the peninsula than to the desert beaches of the Mekran; it extended possibly before the invasion of the Macedonians, as it certainly did in the following ages, round Cape Comorin into the Bay of Bengal and the mouths of the Ganges; thus uniting in commercial intercourse the two great streams which inclose Hindostan.

In the Peucaliotis¹⁵, in the territory of the Malli¹⁶, in the kingdom of Taxiles¹⁷ and Porus¹⁸, Alexander traversed a country abounding in riches, and furnishing commodities from the thirty-second degree of northern latitude, which are sure of finding a market between the tropics. The population of these countries, as stated by Strabo, Pliny, Plutarch, and even Arrian himself, is doubtless exaggerated, but as they all draw from original sources, and quote authors who had personally visited these countries, whatever abatements may be made, we must still suppose that the apparent view of the whole suggested an idea of population, and presented an aggregate of cities, towns, and villages, of which, from the circumstances of their own country, the Macedonians had no previous conception.

These Authors¹⁹ assert, that Alexander subdued five thousand cities in India as large as Cos. Mention is likewise made of a thousand cities in the single province of Bactria; and Arrian, who seems

¹⁵ Pukely Ayeen Akbari, always. ¹⁶ Moulton. ¹⁷ Attock. ¹⁸ Panje-ab.

¹⁹ Robertson, Rennell, Strabo, 693. 686. Pliny, 6. 17. 19. Plutarch, 699.

to be always on his guard; informs us, that the country of the Glaufæ, or Glaucanifæ, contained thirty-seven cities, the smallest of which had five thousand, and the largest ten thousand inhabitants, and that the villages contained an equal number; the whole, amounting to near half a million, Alexander added to the kingdom of Porus²⁰.

Whatever degree of credit may be given to these accounts, they will at least evince an extraordinary population; and, either from the fertility of the country, or its situation among so great a number of navigable streams, the flourishing state of this tract appears manifest in every age, unless when desolated by invasion. The historian of Timour expresses the same admiration as the Greek writers; the Ayeen Akbari reckons the Panje-ab as the third province of the Mogul empire, and mentions forty²¹ thousand vessels employed in the commerce of the Indus²².

It was this commerce that furnished Alexander with the means of seizing, building, hiring, or purchasing the fleet with which he fell down the stream; and when we reflect that his army consisted of an hundred and twenty-four thousand men, with the whole country at his command, and that a considerable portion of these had been left at the Hydaspes during the interval that the main body advanced to the Hyphasis, and returned to the Hydaspes again, we shall have no reason to accuse Arrian of exaggeration, when he

²⁰ We ought not to be surprised at these exaggerations. Cheref-eddin says, Cashmeer really contains 10,000 flourishing villages, but is estimated at 100,000. Vol. iii. p. 161.

The level country is not more than twenty leagues from mountain to mountain. The capital is Nagaz, or Syrin Nagar.

²¹ Maurice, -p. 138, vol. i. from the Ayeen Akbari.

²² —Porum et Taxilem reliquit in regnis suis, summo in ædificanda classe, amborum studio usus. Q. Curtius, lib. ix. cap. 3.

asserts, that the fleet consisted of eight hundred vessels, of which thirty only were ships²³ of war, and the rest such as were usually employed in the navigation of the river.

Strabo²⁴ mentions the proximity of Emodus, which afforded plenty of fir, pine, cedar, and other timber; and Arrian informs us, that Alexander, in the country of the Affacani, and before he reached the Indus, had already built vessels which he sent down the Kophénes to Taxila. All these circumstances contribute to prove the reality of a fact highly controverted; and even though we were to extend the whole number of the fleet, comprehending tenders and boats, with some authors to two thousand, there is no improbability sufficient to excite astonishment.

By the same means that Alexander obtained a fleet, he acquired information in regard to the commerce of the country, and the different coasts with which the natives traded. Taxiles and Porus were both in his interest; many of their subjects doubtless embarked

²³ Τριανότοροι καὶ ἡμιόδοι. Arrian, lib. vi. in init.

Τριανότοροι implies, that they were not even gallees of war, such as the Greeks used in the Mediterranean, and which were called Triremes, gallees with three banks of oars; but these seem to have only one deck, and to be rowed with thirty oars on a line, that is, fifteen on each side; the ἡμιόδοι, according to Gronovius, were half-decked, with the waist of the vessel left open for the rowers. But see Casaubon ad Athenæum. Not. 737.

Major Rennell mentions, that vessels of an hundred and eighty tons are used on the Ganges; and Captain Hamilton, p. 122, vol. i. says, that those employed on the Indus were, in his time, frequently of two hundred tons,

divided into separate apartments which merchants hired for the voyage, and adapted most commodiously to the navigation. They carried a mast and sail, but were more usually towed by men. The passage from Tatta to Lahore is six or seven weeks, but the return is made in eighteen days, or even twelve; the navigation is open, clear up to Cashmeer, by means of the Chelum; and Mr. Forster entered Cashmeer by that stream, which he calls the Jalum. The course of this river is eight hundred miles from Tatta to Multan only, allowing for the sinuosities of the river. See Major Rennell's Memoir.

²⁴ Strabo, 691. Arrian, lib. iv. in fine. Rennell says, Emodus is not near.

with

with him, either for the purpose of conducting the fleet, or with a view to their own advantage; many possibly who had frequently made the same voyage, and knew the commerce of the coast, from whom the inquisitive spirit of Alexander could not fail to extract the information²⁶ necessary for the accomplishment of designs he had contemplated so long, and with such anxious solicitude.

The evidence of this does not rest upon deduction or conjecture; the report of Nearchus the admiral, and Onesicritus the pilot of the fleet, is still extant in the writings of Strabo, Arrian, Diodorus, and Pliny; and though the credit of Onesicritus is impeached by Strabo, on account of his inclination to exaggerate, he does not hesitate to appeal to his authority in a variety of instances, which evince his general knowledge, and sometimes his intimate acquaintance with the country; but from Nearchus he proves, that all the native commodities which to this day form the staple of the East Indian commerce were fully known to the Macedonians. Rice²⁷, cotton²⁸, and the fine muslins made of that material, the sugar-

²⁶ Οὐδὲ τὸτο δὲ ἀπίθαι τοῦ Πατροκλέους, ὅτι φησὶ τῆς Ἀλεξάνδρου συγκαταίνουσας ἐπιδρομαῶν ἰστοῦσαι ἔκαστα, αὐτὸν δὲ Ἀλεξάνδρου ἀκριβοῦσαι, ἀναγραφάντων τὴν ὅλην χάραν τῶν ἱμπεριούτων αὐτοῦ. τῇ δὲ ἀναγραφῇ αὐτῷ δοθῆναι, φησιν. ὕστερον ὑπὸ Ξενοκλέους τῷ γαστροφύλακος. Strab. lib. ii. p. 69. Sainte Croix, 20.

Nor is there any reason to doubt what Patrocles says, that those who accompanied Alexander wrote at random; but that Alexander's own knowledge was accurate, as he obtained his information from those who knew the country best, and made them commit their intelligence to paper. These papers were communicated to Patrocles by Xenocles the Treasurer.—This passage possibly alludes to the survey of Baton and Diognetus. Sainte Croix extends it to more general information.

²⁷ Rice, Ὄρυζα. The cultivation of it by

flooding the lands is noticed by Aristobulus. Strabo, 692.

²⁸ Cotton seems to derive its name from the fruit in Crete, called by Pliny Mala Cotonea, or Cydonia, lib. xv. cap. 11. It is distinguished by other names; Bombax, Bambax, Gossipium, Xylon; the cloth made of it, Byssus. Ferunt cotonei mali amplitudine cucurbitas, quæ maturitate ruptæ ostendunt lanuginis pilas, ex quibus vestes pretioso linteo faciunt. Pliny, lib. xii. c. 10. Byssus, referred by Parkhurst, Lex. in voce, to 2 Chronicles, iii. 14. ὕψος μετὰ ποικιλίας. Herod. lib. vii. Ezekiel, xxvii. 7. Beloe, p. 287. possibly printed cotton, and worn by the priests in Egypt. The Editor of Chambers's Dictionary says, it grew originally only in Egypt; but certainly he is mistaken. See Salmas. Plin. Ex. 296.

cane²⁹, and silk³⁰, are all expressly mentioned in a passage which he adduces from Nearchus; and however the Greeks or Romans became afterwards acquainted with these commodities, the first knowledge, or at least the first historical account of them, is certainly to be attributed to the Macedonians. None of these articles had ever been brought into Greece, or any part of Europe, by sea, and few of them had ever been seen unless by accident; on these, however, it is evident, Alexander depended for the foundation of the commerce he meditated, and for the introduction of these he was now planning the communication which was to perpetuate the intercourse between Europe and the East Indies.

At this day, when we view the effects, without adverting to the cause, we may deem lightly of a voyage which required so much

²⁹ Sugar. "Εἰρηκε δὲ καὶ περὶ τῶν καλῶν ὅτι πινύσι μέλι, μελισσῶν μὴ οὐσῶν. This assertion, Strabo (694) quotes expressly from Nearchus. He speaks also of canes from which honey is made, though without bees. I do not know that Saccharum is used by any author prior to Pliny and Dioscorides, lib. xxii. 8. Saccharum et Arabia fert, sed laudatius India. See Salmasius Plin. Ex. vol. ii. et seq. who has a long dissertation upon the subject, and imagines Pliny's Saccharum, as well as that of Dioscorides, to be manna; yet seems to distinguish the καλαμος of Nearchus as the true sugar-cane. Sacar appears to be a word of Arabick extraction.

³⁰ Silk. The passage in Strabo is not express; but having mentioned cotton before, he adds, τοιαῦτα δὲ καὶ τὰ Σηρικὰ ἐκ τίνων φλοιῶν ξαννομένης βύσσου.

Velleraque ut foliis depectant tenuia Seres.

Virg.

The Critical Reviewers, October 1791, p. 126, interpret this of cotton, as does Salmasius, p. 298. and p. 998; they call the Seres, inhabitants of Bocharia, and Ser-hend, Serinda on the Indus, the staple for silk.

When in Sogdiana, Alexander was in the neighbourhood of Bocharia; but the mention of Σηρικὰ by Strabo is incidental to India; and if it were not for a passage in Arrian, which seems to relate to the same quotation from Nearchus, I should not hesitate to refer this expression of Strabo's to silk. Arrian says, Ἐθῆτι δὲ λινὴ Ἰδοὶ χρῆνται καθάπερ λέγει Νέαρχος λίνα τὴ ἀπὸ τῶν διδύμων, &c. &c. Indic. I have since learnt, that the Reviewers follow the authority of d'Anville Eclairciss.; but that great geographer's error is, consulting similarity of sound in names too much. When the locality is established, resemblance of sound is a strong confirmation, but to fix locality by sound is beginning at the wrong end. I cannot help thinking, however, that the mention of Seres and Serica in allusion to cotton is always error or confusion; for we must observe, that silk, when it came to be known and characterised, was always Serica; while the knowledge of cotton or vegetable wool is as old as Herodotus at least, in Greece. The silk-worm is first described by Pausanias Eliac. sub fine. Gibbon, vol. iv. p. 72, from d'Anville Eclair. Chambers's Dictionary, &c. &c.

preparation

preparation to accomplish, and which a single sloop would now perform in a twentieth part of the time; but the merit of the attempt is to be estimated by the originality of the conception; and we must allow much to the penetration of that mind, which could fix upon the productions of any country as a basis for commerce, that should continue in request for two thousand years, and create a demand perpetually on the increase.

The knowledge of India obtained by the Macedonians will perhaps be as fully exemplified by adverting to objects of curiosity as utility³¹. Of this, Strabo furnishes abundant testimony, who from these

³¹ The following particulars are extracted from Arrian and Strabo, in order to shew that the Macedonians were not only soldiers, but diligent observers. The account given is wholly Macedonian, and nothing inserted later than Megasthenes, who was Ambassador from Seleucus to Sandrocotta; and Sandrocotta, if my etymology is right, signifies a town on the Shantrou or Chen-ab, from whence the Prince took his title. The inquisitive spirit of Alexander is as strong a mark of his character as his passion for conquest. "You," said the Bramin Mandanis to the King, "are the only man whom I ever found curious in the investigation of philosophy, at the head of an army." Strab. p. 715.

The principal casts of India are four:

1. Bramins. 2. Husbandmen. 3. Soldiers. 4. Artisans. There have been always various subdivisions of these; both Strabo and Arrian from Nearchus reckon seven.

1. Philosophers or Bramins. 2. Husbandmen. 3. Herdsmen, Shepherds, and Hunters. 4. Artisans. 5. Soldiers. 6. Inspectors of Manners and Police. 7. Counsellors of the Chief Magistrate. Ar. p. 324. Strab. lib. xv. p. 700. Of these the sixth and seventh classes

were properly never distinct casts, or at least only subdivisions of the others, and the third was possibly comprehended in the second.

Other Particulars mentioned by both.

1. Manner of hunting and taming the elephant. Ar. 328. Strab. 711.

2. Women not deemed dishonoured who received an elephant as the price of their favours. Ar. 331. Strab. 712.

3. No slaves in India. Ar. 330. Strab. 710. Onesicritus confines this custom to the country of Musicanus.

4. Gold collected in the rivers. Strab. 718.

5. Chintz. *σινδύρας ινδαβίαις*. Strab. 709.

6. Cotton tree, called Tala by Arrian, and the pod described. Ar. 320.

Cotton raiment, Strab. pass. Arrian, 330. reaching to the middle of the leg.

7. Parrots. Ar. 329. Monkeys, *ibid.*

8. Use of Strigils and Shampooing. Strab. 709.

9. No intermarriages between the casts. Ar. 320. Strab. 704.

10. Knowledge of letters denied by Megasthenes, Strab. 709, but asserted by Nearchus; who says, they write on linen or cotton cloth.

these sources drew all the information he has left us concerning the tribes or casts of the Indian nations. Under whatever variety these appear in ancient or modern authors, the four orders of priests, soldiers, husbandmen, and artisans still predominate. Of these

cloth, and that their character is beautiful. Ar. 717.

11. Rice planted in water.
12. Wine from rice. Arrack. Strab. 709.
13. Food of the natives. *Oryza Sorbilis*. Pillau. None eat flesh but the hunters. Ar. 331. Strab.

14. The men wear ear-rings. Ar. 330.
15. Dye the beard, *ibid*.
16. Use umbrellas, *ibid*.
17. Do not exercise two trades, 326.
18. Wrap cotton round the head, 330.
19. Two sorts of philosophers; Brachmanes and Germanæ. The first more properly Priests and Diviners; the second Hylobii or Hermits, that is, Fackeers and Jogees. These latter enter every house, and even the women's apartments. Many are attended by women devoted to them, but without suspicion of intercourse; penances and mortifications; residence under the Banian trees. Arrian. Strab. Their discourse usually on death; their philosophy, that the earth is spherical, and the Deity, *anima mundi*. Strab. 713. Burn themselves, not to avoid evil, but to enter on a new life. Strabo mentions Zarmanochegas, one of the Ambassadors from a Porus, King of six hundred Kings, to Augustus, who burnt himself at Athens, on his return towards India.

ΕΡΙΤΑΡΗ.

ZARMANOXHΓΑΣ ΙΝΔΟΣ ΑΠΟ ΒΑΡΓΟΣΗΣ
ΚΑΤΑ ΤΑ ΠΑΤΡΙΑ ΙΝΔΩΝ ΕΘΗ ΕΛΥΤΟΝ
ΑΠΑΘΑΝΑΤΙΣΑΣ ΚΕΙΤΑΙ.

But it is remarkable the MSS. read *Zarmanos*
Xnyav, which is the Caganus or Cagan, as

used by the Huns and Avars. See Ducange in voce; Gibbon, ii. 572. iii. 161. and is in reality the Ham of the Tartars, written Can, Chan, Chaan, Khan, and Cawn. This seems the first instance of using the word; and if so, this is Zarmanus Khan. Perhaps also Zarmanus is related to the Germanæ of Strabo, p. 720.

20. Another sort of philosophers called Pramæ, Strab. 718. who dispute with the Bramins, and attack their doctrine. This sect still exists, and in allusion to them, one of the Mogul Emperors (I think Shah Jehan) said, "The philosopher and the priest can never agree."

21. Perforation of the nose and lips. Ar. 717.

22. Women hunt with the King. Ground marked out. No man must approach. Ar. 710.

23. Women attend the King in war. Ar. 710.

These particulars (and the catalogue might be much enlarged) all agree with our modern accounts of India. They all contribute to prove, that the spirit of research was very active in the camp of Alexander, and that the observations were in general true. There are many likewise which have been deemed false, and which, as our knowledge of India increases, are found to be deduced from popular errors of the natives, or to have some reference to mistaken facts; and what country is not subject to misrepresentation by those who visit it first?

distinctions,

distinctions, Aristobulus, Nearchus, Onesicritus, and Megasthenes were fully apprised. It would be thought mere matter of ostentation, to produce the testimonies of this knowledge as they lie scattered in a variety of authors; but the accounts of Indian policy and government, the principles of the Bramins, the devotion of widows to the flames, the description of the wild³² fig or banian tree, the variety of grain³³, the hair, colour, frame and constitution of the natives, with an abundance of other minute particulars, sufficiently intimate a spirit of observation pervading the Macedonians, as well as that of conquest; and their original materials furnish the ground-work of that accurate investigation pursued at this day with so happy an effect by our countrymen on the banks of the Ganges.

SURVEY of the EMPIRE.

V. THE object of introducing these observations is to shew that the design of Alexander in planning the voyage of Nearchus was not merely the vanity of executing what had never yet been attempted, but that it was a system founded on a presumption of the advantages to be derived from it, a desire of knowing the coast as

³² See Strabo, lib. xv. Pliny, and especially Salmasius Plin. Ex. vol. ii. p. 10. 16.

³³ Strabo mentions a grain called Bosmorus, smaller than wheat, held so choice by the Indians that they suffer it not to be planted, unless under the obligation of an oath to pass it through the fire, in order to preclude vegetation. Some of our countrymen who have been in India might possibly form a conjecture what this grain is. There is a species called Gram, found in Mysore. Major Dirom. But this is for horses. Another called Bajero,

in Guzerat. Maurice's Indostan, vol. i. p. 124. But from the value set upon this, it was possibly some species of rice; of which the Indians are said to reckon forty sorts, and some of which they purchase at any price.

Mr. Dalrymple conjectures, that the unhusking of Paddy to obtain the rice by means of hot water thrown upon it, as is said to be practised in some parts of India, and possibly with some particular species of this grain, may have given rise to this opinion of Strabo's.

well as the interior of his empire, and a reasonable hope of uniting the whole by mutual communication and reciprocal interests.

By tracing the correspondent parts of this system, we shall be able to evince its reality; for though the opening of the world to the knowledge of mankind, as Curtius expresses it, proved in the event a concern of far greater magnitude; the survey of the empire was of more immediate importance to the conqueror. The line of conquest from the Hellespont to the Indus was complete, but the intermediate country was by no means sufficiently explored. The route of the army, after the death of Darius, had been mostly ³⁴ to the North of the Paropamisus, or that range of mountains, by whatever name distinguished, which in Oriental geography separates Iran from Touran. India had been entered on its northern boundary; and when Alexander had completed his campaign at the sources of the Indus, his march and voyage down the course of that river defined the eastern limit of the empire: commencing again from this limit, he resolved to explore the southern provinces, which though they had submitted to the reputation of his arms, were in a political sense still unknown.

To obtain the information necessary for the objects he had in view, he ordered Craterus, with the elephants and heavy baggage, to penetrate through the centre of the empire, while he personally undertook the more arduous task of passing the deserts of Gadrosia, and providing for the preservation of the fleet. A glance over the map will shew, that the route of the army eastward, and the double route by which it returned, intersect the whole empire by three lines almost from the Tigris to the Indus. Craterus joined the

³⁴ Notwithstanding particular expeditions to Propthasia, Arachosia, &c.

division under Alexander in Karmania; and when Nearchus, after the completion of his voyage, came up the Pasitigris to Susa, the three routes through the different provinces, and the navigation along the coast, might be said to complete the survey of the empire.

If the work of Beton and Diognetus had come down to us, or had been as carefully extracted, as the voyage of Nearchus, we should have had better geographical data for establishing the interior divisions of the Persian empire, than any we can now obtain, either from the reports of travellers, or the historians of Timour and Nadir Shah. They are said to have reduced, not only the marches of the army, but the provinces themselves, to actual measurement; and though the rapidity of the movements and the shortness of the time would not admit of an actual survey³⁵, distances accurately set down, and journals faithfully kept, are, next to astronomical observation, the first principles of geography. These officers undoubtedly attended one or other of the armies upon their return, or they might have been allotted one to each; in either case, the attention of Alexander is evident, for the survey itself is attested by almost every contemporary historian³⁶, and was extant in the time of Strabo and Pliny.

Arrian himself has given some countenance to the report concerning the motives which induced Alexander to traverse the deserts of Gadesia. He tells us, that even Nearchus imputed this attempt to vanity and the desire of imitating or surpassing Bacchus and

³⁵ Much more may be done with precision in a short time than is generally supposed; a chain of triangles may be carried on in most countries quicker than an army could march, I might say in any country, except flat and woody, or the defiles of mountains. The

Mahomedans of India measure every road they march; at least, I know this is sometimes the custom, I believe always. Dalrymple.

³⁶ Sainte Croix mentions Ptolemy and Aristobulus, p. 20. but I have not yet found his authority.

Semiramis; the Bacchanalian triumph of the army in its passage through Karmania, recorded by other historians, gives some degree of authority to the testimony of Nearchus; but Arrian, though he relates the circumstance, professes his disbelief of the fact; and an attentive consideration of the designs already displayed, supported by the internal evidence which the journal itself will suggest, ought, in an unprejudiced mind, to exculpate Alexander from the charge of any unworthy motives. To perform what has never yet been performed is doubtless an object of ambition, but the utility of the performance determines the merit of the performer.

That Alexander had a thirst after knowledge³⁷ as well as conquest is a fact sufficiently established; and the testimony of Patrocles, which has been already adduced, goes to prove, that the geography of his empire, and an accurate information concerning the several provinces, formed one of the principal objects of his inquiries. The attention of his officers to these points naturally took its direction from the example of their master; and whatever complaints Strabo has to prefer against such writers as Callisthenes and Onesicritus, the journals of Ptolemy³⁸, Aristobulus, and Nearchus form the basis of Oriental geography, not only as it rose by the labours of Strabo and Arrian, but in the superstructure erected by the masterly hands of d'Anville and Rennell. Aristobulus composed his work at eighty years of age; Ptolemy³⁹, after he was King of Egypt: fear, flattery, and every other inducement to falsification had subsided; they sometimes contradicted each other in

³⁷ The edition of Homer. The letter to Aristotle, complaining of his publication. The eight hundred talents allowed to that philosopher for researches in natural history.

³⁸ Afterwards King of Egypt.

³⁹ Sainte Croix, p. 19, from Macrobius. Arrian, p. 2.

regard to historical facts; but as they both drew most probably from commentaries ⁴⁰ they had framed, during the course of their campaigns, the marches of the army, the position of cities, rivers, mountains, and the general face of the countries they traversed, come out with extraordinary perspicuity, when traced by a master in the science; and every increase of geographical knowledge tends to confirm the accuracy of their reports.

GEOGRAPHERS.

VI. MAJOR RENNEIL has borne the most honourable testimony both to their information and fidelity, by confessing that, as his own researches advanced, he was continually led to consider the details of these officers as more important, and their accuracy as more fully ascertained. The map which he has himself given, corrected by the journal of Mr. Forster, and explained in his Memoir, corresponds not only with the route of Alexander, but with those of Timour ⁴¹ and Nadir Shah, and with the journal of Tavernier, Goez the jesuit, and Bernier.

⁴⁰ And from the works of Beton and Diogenetus. Sainte Croix, p. 20.

⁴¹ In the route of Timour given by Cheref-eddin, there is a regular mistake of the Ravee (Hydraotes) for the Biah (Hyphasis); and this mistake arises from Timour's being drawn southward to Ayjodin, near which city he crossed the Biah, where it takes the name of Dena or Donde; but as Cheref-eddin upon Timour's return calls the Biah the river of Lahore, vol. iii. p. 154. and as we know Lahore stands on the Ravee, or Hydraotes, the mistake is easily adjusted.

Tavernier, vol. ii. p. 61. mentions two routes from Candahar; one to the North by Cabul, which he details; the other direct by Moultan, which he omits. The account is bar-

ren, and makes us doubt whether Tavernier travelled it himself; but he speaks as if he had.

Goez, according to Kircher, *China Illustrata*, p. 62, went from Lahore to Attock and Cabul, and thence through Tartary to China. These three points are all we have, but they accord with Rennell.

Bernier came from Dely to Lahore; his object is to give the pomp of the camp, and the description of Cashmeer; his geographical materials are very scanty.

Hanway's account of Nadir Shah's route is so totally erroneous, that though we can trace the conqueror we cannot follow the historian. Jones's Nadir Shah is transported from Candahar to Carnal in a moment. Frazer, in geographical materials, is very deficient.

Major

Major Rennell professes to have laid down the western sources of the Indus and the rivers of the Panje-ab from the map of a native; and says, that as his own ideas grew correct from this communication, he was consequently better enabled to follow the campaign of Alexander in that country, and trace his movements as they arose; he speaks with confidence as to all the transactions in the Panje-ab, and hesitates only upon some points of less importance before the crossing of the Indus. But in a work appropriated to the military transactions of the Macedonians, and which shall be laid before the Public if this specimen meets with encouragement, I shall be enabled to prove, that the accuracy of his Persian information is as conspicuous to the westward of the Indus as to the eastward; and that through the diligence of his inquiries we are now possessed of data which, there is reason to believe, every future research] that may be made, will contribute to establish. Major Rennell likewise informs us, that his Persian map exhibited a series of the rivers with names correspondent to those which occur in the Greek historians; but he has favoured us only with that of the Bepasha, sufficiently agreeing with the Hyphasis of Arrian: this reserve is the more to be regretted, as the communication would have contributed greatly to correct the errors and elucidate the obscurity of his predecessors.

The *Antiquité Géographique de l'Inde* of Mr. d'Anville is far from standing upon a level with the merits of his other works; and Major Rennell⁴² has observed, with great justice, that having mistaken the Chelum or Hydaspes for the Indus of Alexander, he has consequently misplaced and misnamed all the subsequent rivers of the Panje-ab. This is far from being the only error of that able

⁴² Rennell's second Memoir, p. 82.

geographer; he has confounded the rivers to the west, as well as those to the east of the Indus, and by adopting the Shantrou for one of the Panje-ab streams, (a name which he has obtained from Bernier, and in which he does not discover that Chen-ab lies concealed,) he has confounded the Dindana, Chelum, or Hydaspes, with the Genave or Acesines, and placed Lahore on that river, which, by the testimony of all the authors he usually follows (Cheref-eddin⁴³, Tavernier, and Thevenot), is undoubtedly on the Ravee. The principal source of these mistakes, which Major Rennell has not sufficiently noticed, is a determination of Mr. d'Anville's to find Aornus in Renas; unfortunately for his hypothesis, the Aornus of Alexander was to the west of the Indus, and Renas is between the Indus and the Chelum. The necessary consequence is, that d'Anville is obliged to call the Chelum, or Hydaspes, the Indus of Alexander, and afterwards to perpetuate a chain of error, the result of his original mistake.

There would have been no difficulty to find a Petra answerable to Aornus in any situation to the westward of the Indus. The whole country is mountainous, and infested with mountaineer tribes of banditti, as was experienced by Timour and Nadir Shah, no less than by Alexander. Even an error in this respect would carry no consequences with it; but the misplacing of a river vitiates the remainder of the series. This confusion is not noticed to detract from the merits of Mr. d'Anville, whose geographical reputation stands too high to be impaired by a failure in a single instance, but to evince the danger of indulging a spirit of

⁴³ Cheref-eddin in fact places it on the ville to assume a river for the position of Labiah, but his error has already been adjusted, hore rather to the eastward than the westward p. 21; and that error should have led d'An- of the Ravee.

system,

system, a system founded upon a resemblance of ancient and modern names, never exemplified more fancifully than by a supposition that Renas⁴⁴ and Aornus are the same word, and never to be admitted unless it is justified by local circumstances rather than similarity of sounds.

Having laboured in the investigation of these points several years before the appearance of Major Rennell's Maps and Memoirs, and having no greater authority to apply to than Mr. d'Anville, I had determined to abandon the work itself, for want of sufficient materials to clear the difficulties which attended it: but upon the first view of the last Map and Memoir, finding all the sources of Indus elucidated in the most consistent manner, I resumed my labours; and if this country can now be detailed with perspicuity, let the merit be referred to that author from whom it originates.

The mistakes of d'Anville prevent the application of those materials which modern discoveries have supplied. The errors of the ancient geographers are of less consequence, as both Pliny and Ptolemy give us generally the same series of rivers as the historians of Alexander present, and, however erroneous they may be in particulars, still preserve the general features of the whole. Pliny⁴⁵ enumerates the Kophes, the Indus, the Hydaspes, the Hyphasis, the Hefudrus, in the order they occur, and though he omits the Acesines and Hydraotes, the picture, however incomplete, is not disfigured; but when he adds that Alexander sailed down the Indus at the rate of six hundred stadia a-day, and yet it required more than five months to reach the mouth of the river, he is mistaken in his premises; for it will be proved from Strabo and

⁴⁴ Antiq. Geog. de l'Inde, p. 17.

⁴⁵ Lib. vi. c. 17.

Arrian, that the passage took up nine months, and that various expeditions delayed the fleet as it arrived successively at the several tribes bordering on its banks. Perhaps we ought to read the passage hypothetically; but the assertion itself is extravagant. Six hundred stadia repeated for an hundred and fifty days produce ninety thousand; this sum, reduced by the standard of eight stadia to the Roman mile, amounts to eleven thousand two hundred and fifty miles, and it gives no less than six thousand by the proportion of Mr. d'Anville's stadium of fifty-one toises, while the real space upon Rennell's map occupies only eight hundred. These exaggerations⁴⁶ doubtless originate from the authorities which Pliny followed, and even Arrian himself is not free from charges of a similar nature, though in a lower degree; but if Pliny had consulted his own reason instead of copying his authorities with servility, he could never have assigned six thousand miles to the course of the Indus between Nicæa and the sea, when he gives less than five⁴⁷ thousand to the whole extent of Asia, from the Caspian defiles to the mouth of the Ganges.

The errors of Ptolemy⁴⁸ are of another nature, consisting generally in a mistaken calculation of longitudes and latitudes; but whatever cause we may have to lament his deviation in particulars, geography is more indebted to him for having introduced, or at least for having established, this method of determining local situation, than it can ever suffer by a failure in the application of

⁴⁶ Proditur Alexandrum nullo die minus (quam) stadia sexcenta navigasse in Indo, nec potuisse ante menses quinque enavigare, adjectis paucis diebus. Lib. vi. c. 17.

⁴⁷ This will be proved when the stadium itself is taken into consideration.

⁴⁸ Those who wish to analyse the source of

these errors, and the means of correcting them, may refer to Mr. Gosselin's *Traité de Géographie des Grecs analysée*; where, if they do not find themselves satisfied with his principles of correction, they will at least obtain the clearest view of ancient geography which has yet been presented to the Public.

his principles. The sources from which Ptolemy drew do not sufficiently appear; but as he was a native of Egypt, and lived at the same period with Arrian, a period in which the trade between the Gulph of Arabia and India was in full vigour, we may imagine that he had better means of information⁴⁹ at Alexandria, the centre of this commerce, than Arrian himself had, or any other historian or geographer who lived in the interior provinces of the Roman empire.

This being the case, it is a satisfaction to find, that however misplaced the sources or the mouths of the Indus appear in the maps adapted to Ptolemy by Mercator or Gosselin, there is still, in a geographical view, nothing in Ptolemy inconsistent with Arrian.

The five rivers of the Panje-ab are given in their order, and though the junction of these rivers is necessarily laid down by those who formed the maps correspondent to the author's text, and according to their own knowledge or conjecture, the general similitude is preserved, and the order uninterrupted.

The Hydaspes, Sandabalis, Rhuadis or Adaris, Hypafis, and Zaradrus of Ptolemy, are the Hydaspes, Acesines, Hydraotes, Hyphafis, and Zaranga of Arrian. The Adaris⁵⁰ is only a variation in writing the Hydraotes of Arrian, the Hyarotis of Strabo, all derived from the Indian Ivarati⁵¹; and the Sandabalis, if conjecture deceives me not, is merely a variation of writing Sand-ab, for San-ab, still appearing under the form of Tchen-ab, and depending, as I am informed, upon the enunciation of a Persian⁵² letter

⁴⁹ See this confirmed by Ptolemy himself, Geogr. lib. i. c. 17. Dodwell Dis. in Perip. Mar. Erythræi, p. 90.

⁵⁰ Rhuadis is the Greek text in Ptolemy; Adaris, the Latin.

⁵¹ See Tieffenthaler.

⁵² Thus Gezira is written Djezira, Bejapoor, Vishapoor, Vizapoor. So is this river written Chen-ab, Jen-ab, Gen-ave. See infra.

which we express with difficulty; but of these I shall presently speak more at large.

The mouths of the Indus are as much disordered in the maps adapted to Ptolemy as the sources; and the origin of this disorder is the small difference of longitude which Ptolemy gives between Lonibare, the eastern mouth of that river, and Syastra, a town in the bay of Canthus or Cutch. The difference set down is only thirty minutes, and the result necessarily is, that Lonibare is advanced so much to the East as to fall into the head of the bay, and occupy the place which modern geographers assign to the river Paddar.

Ptolemy furnishes us with seven mouths, and enumerates their names; and it is a just cause of complaint that modern geography neither supplies us with the means of confirming his assertion, or correcting his errors. It is probable that all great rivers which pass through level ground to the sea, as the Nile, the Danube, the Ganges, and the Indus, in process of time vary the channel of their respective mouths, either by inundation, obstructions, accumulation of soil, and other causes, or are diverted for the purposes of agriculture and communication. This has been so remarkably the case in regard to the Nile, that hardly any two geographers, ancient or modern, correspond in their account. The mouths of the Indus labour under the same obscurity. Major Rennell's second map differs essentially from his first; three charts of Mr. Dalrymple differ from both Major Rennell's, and from each other; and Captain Hamilton⁵³, the only navigator I know who went up to Tatta, has

⁵³ Capt. Hamilton, though a very pleasant, does not appear clearly from his narrative, whether he went up on the eastern or western side of the Lari-bundar river; but this will be farther noticed.

not given any account satisfactory to a geographer; though he has preserved one circumstance which coincides with Ptolemy, assuring us that the natives still call the mouths of the Indus, Divellee, or seven, though they are far more numerous.

These particulars may be of importance to direct the inquiries of future travellers and navigators; and if they afford but little additional light in regard to the object before us, will plead in excuse of the present attempt to collect all that is known upon the subject. The point necessary to elucidate is the course of the two main branches, East and West, navigated by Alexander; and to answer this purpose we might assume the Sagapa and Lonibare of Ptolemy, as the Lari-bundar and Bundar Lari of the moderns⁵⁴. There is something peculiar in this modern appellation, that the same word reversed should be applied to the eastern and western mouth of the same river; for Bundar is only a Persian term for the mouth of a river, a port, or harbour⁵⁵; and Lari, or Laheri, is common to both. Not daring, for want of Oriental learning, to ascertain the antiquity of this appellation, I ought to be silent on the subject; but I cannot help expressing a conjecture that the modern

⁵⁴ In a translation of the treaty between Mohammed Shah and Nadir Shah, given in Frazer, p. 226, the Mogul Emperor cedes all the country to the West of the Attock, Scind and Nala Sunkra, to the Persians, but the town of Lohry-bundar and all to the East of those streams are still to continue subject to Hindostan. Attock means the higher part of the stream; Scind and Mehran, the lower; and as Lohry or Lahri-bundar certainly means the town on the eastern branch, I conclude Nala Sunkra, the canal of Sunkra, to be the

proper name for that branch; for Tatta and its dependencies are ceded to Persia, *i. e.* the whole Patalene.

⁵⁵ Or on land, a gate or pass; Derbend, iron-gate on the Caspian.

I imagine, that in Persick it is properly Bend or Bender; and that Bundar is a corruption; but Frazer writes Bundar. The vowels vary so much, that Tchan, Tchen, Tchin, and Tchun, are equally the first syllable of Chin-ab.

Lari-bundar bears some analogy to the Lonibare⁵⁶ of Ptolemy, and if any literal error could be supposed, I should read it Laré-boni.

These two points to the East and West, modern navigation has nearly ascertained⁵⁷; and one intermediate mouth known by the name of Scindy Bar, and characterised by the Sheik's tomb, is also clearly distinguishable; the others appear like openings that have been viewed by vessels as they passed, rather than examined; and which, from the nature of the coast, probably never approach near enough to determine any point with accuracy; but if the two extremes are sufficiently defined, we shall have data to illustrate the account of Nearchus, and resemblance enough to make Arrian and Ptolemy consistent.

As the works of these several geographers, ancient and modern, will be perpetually referred to, it will not be thought superfluous that their respective merits have been traced. The notice of their general coincidence and particular deviations, at the same time that it conduces to the investigation of truth, will, if I am not mistaken, afford much satisfaction to all who are admirers of geography as a science.

D A T E S.

VII. NEXT to geographical accuracy, it is an object of importance to fix the dates of the transaction with precision, as the year is mistaken by Petavius, who follows Diodorus, and the season by Montesquieu, who supposes the difficulties experienced by the fleet

⁵⁶ The same sort of transposition takes place in a variety of names, Samydaké, Samykadé; Warrell, and some others, appear better Barada, Badara. Hudson's Geog. Min. vol. i. known. Marcian. Heracleot, p. 23.

⁵⁷ See Major Rennell's Postscript. Richell,

to have arisen from the circumstance of performing the voyage during the prevalence of the South-west monsoon.

As there are two departures of the fleet, one from Nicæa, and another from the mouth of the Indus, it will be expedient to ascertain them both; but as the latter is most important, we shall commence the investigation by stating in the words of Arrian⁵⁸, that the fleet took its departure from its station in the Indus on the twentieth of Boedromion, in the archonship of Cephisodorus, corresponding with the eleventh year of Alexander's reign. This precision is of consequence, because the list of archons is by no means accurate, and without the addition of the year of Alexander there would still be room for doubt. Dodwell and Usher give a triple series of archons from Diodorus Siculus, Dionysius of Halicarnassus, and Arrian; and the deduction of Dodwell does not perfectly correspond with Usher. Usher's table stands thus:

OLYMPIAD CXIII.

<i>Diodorus Sic.</i>		<i>Dionysius Halic.</i>		<i>Arrian.</i>
1. Euthycritus.	—	Euthycritus.	—	Hegemon.
2. Chremes.	—	Hegemon.	—	Chremes ⁵⁹ .
3. Anticles.	—	Chremes.	—	Cephisodorus.
4. Socicles.	—	Anticles.	—	Anticles.

⁵⁸ Τότε δὲ ἤρμηντο ἐπὶ Ἀρχόντος Ἀθήνησι Κη-
φισιδάρῃ ἐκὰδὶ τῷ Βοηδρομιῶνος μηνός, καθότι Ἀθη-
ναῖοι ἀγνοοῦν, ὡς οἱ Μακεδόνες τε καὶ Ἀσιανοὶ ἤγουν,
τὸ ἐνδεκάτον βασιλευσέντος Ἀλεξάνδρου. Ar. Indic.
335.

⁵⁹ Dodwell differs from Usher, in assigning
Arrian's Hegemon to the year which Usher
affixes to Chremes. Arrian, p. 219, says,
The battle with Porus was fought in the month

of Munychion, in the archonship of Hege-
mon. Munychion answers to April; and
therefore as Hegemon had entered into office
the preceding July, April was the tenth month
of his year, Ol. cxiii. 1. instead of Ol. cxiii. 2.
The year by our estimation is 327 A. C.
which answers to Ol. cxiii. but by the different
commencement of the Attic year is in reality
Ol. cxiii. 1.

The discordance of these authors is so glaring, that after the laborious researches of Dodwell, all attempts to reconcile them may well be deemed superfluous. Let us therefore have recourse to the year of Alexander, which, from a variety of concurrent testimonies, is easily established.

According to Plutarch, Alexander was born⁶⁰ in the first year of the hundred and sixth Olympiad, on the sixth day of Hecatombæon, answering to the Macedonian month Lous⁶¹. This date corresponds, according to Dodwell⁶², with the twenty-sixth day of July, in the year three hundred and fifty-six before Christ. Concerning the actual day, Scaliger⁶³, Petavius, and Dodwell are at variance; in regard to the year, they are all agreed; and the additional testimony of Usher is a confirmation. Alexander succeeded to the throne, Olympiad cxi. i. or in the year three hun-

⁶⁰ According to Petavius, Alexander

was born, — 356 A. C. Archon Elpines.

Philip died, — 336 A. C. Archon Pythodorus.

11th year of Alexander, 326 A. C. Archon Anticles.

Alexander died July 19, 324 A. C. Archon Hegesias.

According to Usher, Alexander

was born Sept. 24, 356 A. C. See Usher, p. 185, with his remark on Lous and

Philip died, — 336 A. C. Boedromion. See also Dodwell de Vet.

11th year of Alexander, 326 A. C. Cycl. Dis. iv. sect. 14.

Alexander died, — 323 A. C. N. B. The year of Christ is not marked in the margin of Usher, from the year 328 to 323.

If this should excite a curiosity to examine this subject, there is a Dissertation on the Birth of Alexander in Baron de Sainte Croix, p. 325.

⁶¹ Scaliger does not accede to the synchronism of Lous and Hecatombæon. The discordance is reconciled by others, who suppose that the alteration in the commencement of the Attic year led Plutarch into an error. Dodwell observes with great propriety, that after

Greece became a Roman province, the possible adoption of the Roman calendar rendered the Greeks negligent of their own. Dis. ii. sect. 15.

⁶² Dodwell de Vet. Cyclis, p. 721.

⁶³ Scaliger Em. Temp. 416. August 7.

dred

three hundred and thirty-six before Christ; and according to Usher on the twenty-fourth of September. If Usher is right, Alexander was a few months more than twenty at this period, and this is consonant to the testimony of other historians, and the epoch of his death. But if he began to reign in three hundred and thirty-six⁶⁴ before Christ, the year three hundred and twenty-six is consequently the eleventh year of his reign. This is the date Arrian means to establish; and whether or not he has given the right name of the archon is not very material.

This discussion might have been spared if Diodorus and Petavius had not stood in the way; for though Ælian labours under a similar mistake, little attention is due to his errors in a matter of chronology. It is surprising that Diodorus should have anticipated a year, and placed this transaction in the year three hundred and twenty-seven before Christ. It is still more extraordinary that Petavius should adopt his error. It appears at first sight as if Diodorus had confounded the departure from Nicæa with that from the Indus, but his narrative does not allow this; and he not only commences, but finishes, the voyage in the year three hundred and twenty-seven at Salmus⁶⁵ in the Gulph of Persia. This was impossible, for Alexander died in three hundred and twenty-four before Christ, and the intermediate transactions from the time he received the fleet near Susa, to the hour of his death, are as clearly ascertained as those of any monarch in Europe who has reigned within a century.

⁶⁴ That is, if Alexander ascended the throne on the 24th of September 336 A. C. the eleventh year of his reign commences on the 24th of September 326; and as the fleet

did not sail till October, the date is consistent.

⁶⁵ A city mentioned by Diodorus only. Ed. West, p. 243.

The performance of the voyage, it is true, does not derive its importance from the year in which it was accomplished, however necessary it may be to support the order of chronology; but it never could have been accomplished with such vessels as the Macedonians used, if the supposition of Montesquieu were founded, that they failed against the Monsoon. Fortunately the Monsoons blow in the same season now that they did in the time of Alexander; and we have the date of the month given us so positively by Strabo and Arrian, that we cannot be mistaken in fixing the departure either from Nicæa or the Indus. Both these authors followed the journals of Aristobulus and Ptolemy, and the information collected by both is so nearly coincident, that we cannot doubt their veracity; in fact, there is but one intermediate report between the author of the Journal and ourselves.

Strabo⁶⁶ fixes the departure from Nicæa in the year three hundred and twenty-seven⁶⁷ before Christ, a few days before the setting of the Pleiades; an expression obscure indeed, though precise. The ancients had two settings of their constellations, morning and evening, and accordingly Columella⁶⁸ says, on the thirteenth or twelfth of the calends of November, (that is, on the twentieth or twenty-first of October,) the Pleiades begin to set at sun-rise; and a few lines after, on the fifth of the calends of November, (the twenty-eighth of October,) the Pleiades set. The phrase of Strabo is simple, without the addition of morning or evening, which he adopts upon other occasions; we must therefore apply it to the latter expression of Columella, which is simple likewise; reckoning,

⁶⁶ Strabo, p. 691.

Porus for 327 A. C. and the departure from Nicæa is in the autumn of the same year.

⁶⁷ Blair's Chronology does not mention the Voyage of Nearchus, but fixes the war with

⁶⁸ Col. lib. xi. cap. 2.

consequently, the setting for the twenty-eighth of October, and fixing a given number for a few days, we settle the departure of the fleet from Nicæa for the twenty-third of October, in the year three hundred and twenty-seven before Christ.

In regard to the second departure the year following from the Indus, we have the united testimony of Strabo and Arrian with a shade of difference, which, though it might be well to reconcile, is not an object of importance. The date of Arrian is the twentieth of Boedromion; the date of Strabo is the evening rising⁶⁹ of the Pleiades⁷⁰, and both profess the authority of Nearchus. Strabo's date may be elucidated by observing, as Salmasius informs us, that the rising is the appearance of a star after having been concealed by the sun, and the evening rising is, when it appears in the evening on the setting of the sun. The evening rising of the Pleiades is fixed by Columella for the sixth of the Ides, (that is, the tenth of October,) we have therefore the intended sense of our author exhibited in the clearest light.

Arrian has given us a fixed day with more apparent precision, but with less real information; for it is well known, to the great vexation of every one who has had to calculate the date of any fact connected with Grecian history, that the commencement of the Athenian year is moveable, like our Easter, and may wander through as many days from the same cause, the appearance of a full moon. The full moon next after the summer solstice was the day appointed for the Olympick⁷¹ games, a day probably fixed upon to give the best season of the year, and the brightest nights for the celebration

⁶⁹ Ἀνατολή ἐπὶ ἡλίου, ἐπιτολή δὲ ἢ φανέρωσις τῶν ἄστρον, &c. Sal. p. 720.

⁷⁰ ἄστρον μετὰ τὴν κρύψιν τὴν ἡλιακὴν. Sal. p. 748.

⁷¹ See Scaliger Emend. Temp. p. 29. who quotes Pindar and his Scholiast.

of those games, which were the boast and passion of the people. The day on which this full moon was new, was the commencement both of the Olympian and Athenian year, and a year formed on this principle requires perpetual calculations of the moon's changes, whenever a date is to be reduced to the precision of modern chronology. Fortunately for those who are engaged in researches of this kind, the indefatigable Dodwell⁷² has given us a series of years which comprehends this epoch; according to his calculation, the third year of cxiiith Olympiad, which answers to three hundred and twenty-six before Christ, commenced on the sixteenth of July, and Boedromion, the third month of the year, on the thirteenth of September; the eighteenth of that month he discards, and consequently the twentieth of Boedromion coincides with the second of October. We have already shewn that Strabo's evening rising of the Pleiades answers to the tenth of October, and if we now prove that Arrian's date is the second of the same month, we have an approximation too exact to suffer Montesquieu's error to mislead us, and perhaps as near as, at the distance of two thousand years, can be expected.

It was in contemplation at one time to have pursued this research farther, and examine the minute causes which might have produced this variation, small as it is, between two authors of such high repute as Strabo and Arrian; but upon referring the question to Mr. Wales⁷³, one of the most accurate astronomers of the age, he was of opinion that the precession of the Equinoxes (which had been suspected) was insufficient to account for the error, and likewise expressed his doubts whether the ancients were ever accurate in fixing the rising and setting of their constellations. His doubts were

⁷² Dodwell de Vet. Cyclis, p. 721.

⁷³ See Mr. Wales's Answer in the Appendix, No. 1.

afterwards found to be well grounded; for Salmasius has demonstrated, that in some instances of this kind hardly any two of the ancient astronomers are agreed. It is possible, however, that Strabo's expression may be laxly interpreted to mean *about* the evening rising of the Pleiades; for, in a similar instance, the morning setting of the Pleiades (November the 8th) is esteemed the commencement of winter; after which it is dangerous to sail; but it is not till the eleventh that the kalendar says, *Maria clauduntur*; we should therefore esteem the rising or setting of the constellations as marking rather the season than the day. If so, there is latitude given to bring him nearer to Arrian: but let the question be resolved as it may, the deviation is so small, that in neither case will it compel Nearchus to perform his voyage in opposition to the Monsoon. As a positive day is given by Arrian, I shall assume this in preference, and on the authority of Dodwell, fix the departure of the fleet from the Indus for the second⁷⁴ of October, in the year three hundred and twenty-six before Christ; notwithstanding, the advance of eight days, according to Strabo, would be a more advantageous point to assume.

THE MONSOON.

VIII. THE Monsoon is a term so familiar at present, that it is hardly necessary to observe, it signifies, in India, a wind that blows six months from the north-east, and six months from the south-west. This wind, unknown in the Great Atlantic and Pacific

⁷⁴ Usher fixes on the first of October, which, allowing for Dodwell's exclusion of the eighteenth of September, brings his date to correspond with ours. Had Usher favoured us with his mode of calculation, this deduction

might have been spared. But see Usher on the Solar Year, cap. 1. and consult the authors concerning the time expended after Alexander's return.

Oceans,

Oceans, extends, with a variety of inclinations, through all the seas of India from Japan to Madagascar; its general course only is north-east and south-west; its particular deviations depend on the position of mountains, capes, and bays, which sometimes obstruct or direct its course; and near the coast it almost universally gives way to the land and sea breezes, which blow alternately every twenty-four hours. We shall have occasion to notice all these circumstances during the passage of Nearchus from the Indus to Cape Jask, and shall find authorities to support them.

In a collection of papers furnished by Mr. Dalrymple, I have a Journal of Lieutenant M'Cluer, which will enable me to give a better account of the Monsoon in this track, than could have been procured by any other means of information.

"The vessels bound from Malabar to the Gulph of Persia usually make Muscat, on the coast of Arabia; and the best time for making this passage is during the months of November, December, January, and February." This proves that the north-east Monsoon, which commences with some fluctuation in October, fixes steadily in November, and continues in force for four months, when it begins to fluctuate again in March, and does not fix steadily to the south-west till April or May. John Thornton says⁷⁶, "In November, December, January, while the wind is northerly within the tropic, it is easterly along the coast of Mekran, with a current setting to the westward." And another navigator⁷⁷ of this track says, "Between the latter end of October and the middle of No-

⁷⁵ M'Cluer, p. 1; and Tavernier, p. 2. vol. ii.

⁷⁶ P. 71.

⁷⁷ C. Rannie, in Mr. Dalrymple's Collection.

"vember,

“ vember, the land and sea breezes ” begin along the coast of “ Guadel, (Mekran,) and continue four months.” He adds, “ If a “ land wind blows either morning or evening, a ship may depend “ on a sea breeze, or at least a wind along the coast from the north- “ west, to bring her in shore again ”; neither is the land or sea “ breeze ever attended with squalls of thunder or rain.” Tavernier⁸⁰, who made this voyage himself from Ormus to Surat, mentions, that the passage is made during November, December, January, and February, from Surat to the Gulph of Persia, in fifteen or twenty days.

It has been thought necessary to detail these circumstances, in order to shew that if Nearchus failed, as he did, the beginning of October, why it was necessary for him to wait twenty-four days in port, near Cape Monze, (Eirus, or Irus,) till the Monsoon was settled in November; he had then every circumstance in his favour, an easterly wind setting along the coast, a land breeze to give him an offing, without danger of being carried out to sea, no fear of squalls or storms, and a current conspiring with all these advantages to ensure his success.

Whether Nearchus was apprised of all these co-operating circumstances may be doubted; but there is great reason to believe, that the navigation was practised by the natives, at least in detached portions of the voyage, if not along the whole coast; and we may be sure, if he found at Patala any pilot⁸¹ capable of conducting him,

⁷⁸ The sea breeze blows from noon to midnight; the land breeze from midnight till noon. The weather is generally pleasant and serene in the N. E. Monsoon.

Journal of the Houghton Indiaman, 1756. Mr. Dalrymple.

⁷⁹ Rannie, p. 88.

⁸⁰ Tavernier, vol. ii. p. 2.

⁸¹ He did find a pilot at Mofarna, which, at the same time it proves a navigation carried on by the Persians, Karmanians, or more probably the Arabians, along the coast, evinces the attention of Nearchus.

neither

neither his own foresight nor the prudence of Alexander would have been wanting to procure assistance. The general effect of the Monsoon he certainly knew; he was a native of Crete, and a resident at Amphipolis, both which lie within the track of the annual or Etesian winds, which, commencing from the Hellespont, and probably from the Euxine, sweep the Ægean sea, and stretching quite across the Mediterranean to the coast of Africa⁸², extend through Egypt to Nubia or Ethiopia.

Arrian has accordingly mentioned the Monsoon by the name of Etesian winds; his expression is remarkable, and attended with a precision that does credit to his own accuracy, and the authorities from which he drew his information. These Etesian winds, says he, do not blow⁸³ from the north in the summer months, as with us in the Mediterranean, but from the south⁸⁴. On the commencement of winter, or at latest on the setting of the Pleiades, the sea is said to be navigable till the winter solstice. This setting of the Pleiades must again cause some confusion, for though Gronovius, in his Commentary on Arrian, fixes this for the eleventh of November, because the kalendar says, navigation ceases on that day; yet Columella places the setting on the twenty-eighth of October, and the morning setting on the eighth of November. We shall prefer, on

⁸² A vessel going up the Nile has always in these months a fair wind against the stream. She comes down like a log upon the water. See Bruce, Pocock, Norden, &c.

⁸³ And in another place; the Etesian winds, which prevail the whole summer season, blowing from the sea upon the coast, render navigation impracticable, p. 335. The mouths of the Indus front exactly south-west.

⁸⁴ This passage of Arrian is accompanied, in the edition of Gronovius, by a long and angry note, as too many of his are. He interprets his author, however, as intending to say, that as the Etesian winds in the Mediterranean blow from the north in summer, and are generally succeeded by an opposite wind in winter, the reverse takes place in the Indian ocean; the summer Etesian is south, the winter north.

this

this occasion again, the setting as expressed simply by both authors, and fix the change of the Monsoon as intended by Arrian for the twenty-eighth of October; a day which coincides so nearly with modern observation, and so identically with the circumstances of the voyage, as to give it a fixed preference to all others. Arrian is not so happy in limiting the termination of the Monsoon to the winter solstice, for it has been already shewn, that it continues to blow during January⁸⁵ and February, and does not fluctuate till March; so far is this, however, from impeaching Arrian of ignorance, that it is a proof of his attention and veracity. The fleet reached Karpella before the end of December; Nearchus had consequently no opportunity of observing the prevalence of the Monsoon after the winter solstice; he delivered, therefore, what he knew to be true from his own experience, without considering or knowing what the winds were in January and February; and Arrian copied as faithfully as Nearchus related.

We know from later writers⁸⁶, that the ancients were perfectly acquainted with the nature and seasons of the Monsoon, and that from the time of Claudius, the fleets which sailed from Egypt traversed the Indian ocean to the coast of Malabar, and returned from that coast again, by means of the Monsoons, without confining themselves any longer to the winding of the shore. It is not, however, our object to display the advances made in later ages, but to specify the discoveries of the Macedonians, and the fidelity of the historian; yet we cannot avoid mentioning some particulars that occur in the navigation⁸⁷

⁸⁵ See B. de Sainte Croix, Note lxii. p. 319, who says, τὰ ἑσπέρια ἐν χειμῶνι means the vernal equinox. I should be glad to give this construction, if the Greek language allowed it.

⁸⁶ Dodwell's Dis. on the Periplus Mar. Erythr.

⁸⁷ Periplus Maris Erythraei, in Hudson's Col.

of the Indian ocean, which bears the name of Arrian, and which, as Dr. Robertson says, very justly deserves more attention than has hitherto been paid to it by geographers. That it is not the work of our Arrian is evident, for the author is as ignorant of the countries inland, as he is accurate on the coast; he is equally ignorant of the extent of Alexander's conquests, whom he supposes to have erected altars and chapels in Guzerat, (Barigaza,) though he passed little beyond the eastern mouth of the Indus. His errors, however, are pardonable, if we consider him, as what his work declares him, a merchant, or navigator in the seas he describes; as one who had personally visited both coasts of the Red Sea, the coasts of Africa and Arabia, and the coast of Malabar from the bay of Cutch, possibly to the kingdom of Calecut⁸⁸: that we are authorised to assume this, is evident from a passage not very intelligible, where he says, "In sailing into the Gulph of Arabia *we* keep our course in the middle; *we* sail nearer the coast of Arabia." The adoption of the first person seems conclusive, and as his description includes Cape Gardafui, (Aromatum Promontorium,) Cana⁸⁹, and Ras-al-gate, (Syagros,) in Arabia; the departure of the vessels from those points with the Monsoon, the cargoes they carried, the part of the coast they reached; the particulars of the bay of Cutch, (Baraces,) of Cambai, of Guzerat, (Barigaza,) of the Ghauts, and the

⁸⁸ Without building any proof upon what follows, I cannot help observing, that as the boundary I fix for this Arrian's knowledge is Cottonora, so it is remarkable that Salmasius's readings of Pliny or Solinus vary on this word; for he says he found Cottahonore, Quodtaonare, and Cottaonore. Now it happens that Cotta is a native term for a fort, as

Devi-cotta, Palam-cotta; and Cotta Onore gives exactly Onore, a place about one hundred and eighty miles to the north of Calecut, and which is as convenient a point for Arrian's Cottonora, as Calecut which Dr. Robertson assumes.

⁸⁹ Cava-Canim, d'Anville; Cape Far-taque, Robertson. Baraces. Baroach?

Deckan⁹⁰, with the return from the coast of Malabar by means of the north-east Monsoon; all these indicate a knowledge rather proceeding from observation than intelligence; all prove that he was not a man of letters, but a curious navigator, and a faithful reporter. To pursue this inquiry may be thought an intrusion upon the province of Dr. Robertson, but there is much curious matter in this tract that he has left untouched, and some circumstances have escaped his notice which are matter of surprise. Dr. Robertson has not demonstrated that the Ptolemies had an immediate intercourse with India; he supposes, on the authority of this Periplus, that vessels did pass from the Red Sea by coasting along Arabia and the Mekran to India. I am willing to accede to this supposition upon the same authority, but I have searched for farther evidence⁹¹ in vain; and as Dr. Robertson has produced no other, it is reasonable to conclude that proof is wanting⁹². It is worthy of remark that Pliny⁹³ says, the knowledge of this navi-

⁹⁰ His term is Dachanabades. It is well known that Deckan signifies the south, and the modern Deckan, in the peninsula, is so called because it lies south of the seat of government. It is curious to find this name as old as the time of the author. Deckan signifying south, and Abad, a city; Dachanabades signifies the capital of the south. Where to place this is indifferent; as, if we were speaking of modern times, we might doubt whether we should call Poonah, Aurungabad, or Seringapatam, the principal city of the south. The reigning prince took the name of his city or province. The modern Deckan is the country of the Nizam, his capital Aurungabad.

⁹¹ Huet (*Histoire du Commerce*) drops the prosecution of this question at the very point he ought to introduce it, p. 38, and p. 99,

and countenances the opinion I have adopted, p. 313. See also p. 302. 246. Ed. Paris, 1727.

⁹² From a passage in Pliny, lib. vi. c. 23, Dr. Robertson lays down a passage from Rasal-gate (Syagros) to Zizerus, a place somewhere in India; but as neither Montesquieu, Major Rennell, nor Dr. Robertson, can find out where this Zizerus lies, it is a great proof of Pliny's indistinct description of India, which appears upon all occasions. After Dr. Robertson has laboured the point as much as it will bear, he concludes thus: It is probable that their voyages were circumscribed within very narrow limits, and that under the Ptolemies no considerable progress was made in the discovery of India. Sect. i. p. 37.

⁹³ Lib. vi. 23. Nunc primum certâ notitiâ patefcente.

gation was in his own days only beginning to be known, and afterwards that the names of the cities and nations enumerated are found in no author of prior date⁹⁴. It is equally extraordinary that the discovery made of a passage across the Indian ocean by means of the Monsoon, corresponds, in point of time, with this information of Pliny; for Hippalus the author of that discovery lived in the reign of Claudius, and with that discovery it is easy to connect the account of a city called Arabia⁹⁵ Felix⁹⁶ in the Periplus⁹⁷. For the author says, it is near the mouth of the Red Sea on the Arabian side, and had formerly been the point of rendezvous between India and Egypt, till it was destroyed by the Romans⁹⁸ not long before his time. What then are we to conclude? but that the success of Hippalus opened a new channel for this commerce; and that the Romans, like all other trading nations, wished to establish a monopoly for themselves by destroying the prior means of intercourse? Have we not, therefore, great reason to suspect that the fleets of the Ptolemies went no farther than to these marts in Arabia, where they purchased the commodities of India, and whence they dispersed them over Europe? It is not by this meant to infer, that no vessels from Egypt ever circumnavigated Arabia into the Gulph of Persia, or penetrated into India; for there is great reason to suppose they visited both, and explored likewise the coast of Africa; but the silence of authors, and the little⁹⁹ said

⁹⁴ Strabo, however, is of prior date, but a Greek, and perhaps Pliny means to specify Roman authors. Plin. lib. vi. 23.

⁹⁵ Thus in the original; but probably a corrupt text.

⁹⁶ Huet, Histoire du Commerce, p. 302, supposes this Arabia Felix to be Aden; and Aden, he says, signifies *delices*, p. 54; in which sense it is applicable to Arabia Felix.

⁹⁷ Dodwell's Differt. in Periplus. M. Eryth. p. 102.

⁹⁸ By Caesar. Which Caesar?

⁹⁹ The expression in the Periplus is remarkable, p. 32, τῶτον δὲ ὅλον τὸν εἰρημένον Περίπλου ἀπὸ Κανῆς καὶ Εὐδαίμονος Ἀραβίας διὰ μὲν μικροτέροις πλοίοις ΠΕΡΙΚΟΛΠΙΖΟΝΤΕΣ ἔπλεον. The whole voyage was indeed performed from Cana and Arabia Felix, but in vessels of an inferior size, and by a navigation along the coast. This, while it proves that the voyage was performed, demonstrates at the same time the little effect produced from it.

upon the subject by the writer of the Periplus, afford strong presumptions to conclude that these voyages were not frequent¹⁰⁰; that Indian commodities were chiefly purchased in Arabia; and that the Romans had the good fortune to reap all the advantages from the discovery of Hippalus, to destroy the old channels of commerce, and appropriate the new one wholly to themselves. Two passages of Strabo afford strong evidence of the fact; for in the second book¹⁰¹ he says, that the knowledge of the Romans commenced with the expedition of his friend Ælius Gallus into Arabia Felix; in whose time an hundred and twenty ships sailed from Myos Hormus; and in the seventeenth book¹⁰² he adds, that formerly scarcely twenty ships dared to navigate the Red Sea so far as to shew¹⁰³ their heads beyond the Straits. Ælius Gallus undertook his expedition under Augustus, and if he opened this navigation, the discovery of Hippalus under Claudius established it. The whole of this, indeed, is contrary to Mr. Bruce's system¹⁰⁴; he has however, upon this occasion, so much hypothesis, and so little of historical fact, that I am not bound to follow his conjectures, in order either to confirm or refute them. What use the Ishmaelites made of the Monsoon, or how the Ptolemies profited by it, is problematical; but the discovery of Hippalus is a fact; and though he is barely mentioned by Pliny, we have a distinct account of him from the author of

¹⁰⁰ There is a passage in Pliny, lib. vi. 22. which mentions, that in the reign of Claudius, Annianus Plocamus, who was farmer of the revenues in the Red Sea, while he was going round the coast of Arabia to collect them, was carried out to sea, and beyond Karmania to Hippurus, a port in India; and that the prince reigning there, induced by his account of the Romans, sent an embassy to the emperor. If a voyage to India had been a common occur-

rence in the time of Claudius, would this narrative assume so much of the marvellous? Pliny adds, that this embassy gave the Romans the first certain intelligence of Taprobane.

¹⁰¹ P. 118.

¹⁰² P. 798.

¹⁰³ ὥς τε ἔξω τῶν συνῶν ὑπερκύπτειν, p. 798, and p. 118, ὀλίγων παντάπασιν θαρσύντων πλῆιν. Few, if any at all, had the courage to sail.

¹⁰⁴ Book ii. chap. 5.

the Periplus. He informs us, that small vessels had formerly made a coasting passage from Cana, (Cape Fartaque,) in Arabia, to the Indus, but Hippalus observing the scite of the emporia, and the appearance ¹⁰⁵ of the sea, ventured upon a navigation across the ocean at the season of the south-west Monsoon ¹⁰⁶. Since his time, all vessels follow the same track; they sail for India in the month of July, and return, according to Pliny, in December. This slight mention of coasting voyages is nearly all the evidence we have of a direct East Indian commerce under the Ptolemies; and it is natural to conclude, that, existing in this manner, it was far more profitable to purchase Indian commodities in the ports of Arabia, than to fetch them from India by a navigation so hazardous and circuitous.

I have been led into this disquisition, however unnecessary it may appear, first, because it seems a point not sufficiently attended to, or noticed by former writers; and secondly, because it attaches to the voyage of Nearchus in a very extraordinary manner. The coast of the Mekran, (Gadrosia,) which had not been heard of in Greece before the time of the Macedonians, was visited but little on account of commerce, and perhaps not at all, except by the few vessels which performed those coasting voyages just mentioned, and which probably never touched at any port on it, unless from necessity. As late, therefore, as the time of Strabo and Pliny, that is, at the distance of three hundred and fifty, or three hundred and eighty years, no fresh intelligence had reached the writers of Greece or Rome.

¹⁰⁵ σκηλας.

¹⁰⁶ Libonotus. Salmasius has a long dissertation to prove, that Libonotus is not south-west, but west. Had he asked any seaman which way the Monsoons blow in India, he

might have saved himself the trouble. D'Anville more sensibly lays it down south-west. This wind, in honour of the man who first had the skill and courage to profit by it, was afterwards called the Hippalus.

Strabo gives much the same account as Nearchus; Pliny is too indistinct to make us suppose he had any better materials; but a period afterwards arrived, and to all appearance after the discovery of Hippalus, when this coast was again visited; for Ptolemy, who lived in the reign of Adrian ¹⁰⁷, by residing at Alexandria, had the opportunity of making inquiries upon the spot. Some merchants and navigators evidently in his age frequented this coast, for he does not draw his materials from Strabo, Arrian, Nearchus, or Onesicritus, but exhibits a varied list of names and situations, in the arrangement of which he is followed, with little deviation, by his copyist Marcian of Heraclea. But however some few individuals might furnish information to the geographer, the discovery of Hippalus now diverted the general course of navigation to the richer coast of Malabar; there was no occasion, and little inducement, to visit the Mekran; and consequently there is a chasm of silence on this subject in almost every geographer, voyager, and traveller, from the time of Ptolemy till the period when the Portuguese penetrated again to this coast of desolation. But though the Portuguese formed settlements in this country, we find little distinct information in their accounts; and if the English East India Company had not directed a survey of this coast to be made, the expedition of Nearchus could not have been properly illustrated, nor the narrative of Arrian so fully vindicated, as it may now be, from the charge of imposture.

THE STADIUM.

IX. THE application of the circumstances attendant upon the Monsoon, to the voyage under contemplation, has been an easy and

¹⁰⁷ Anno C. 138.

a pleasant task ; and if it were possible to arrange the measures used by our author, and the distances assigned, with the same accuracy, the journal might be presented to the reader with as much precision as a modern voyage : but no accuracy of this kind is to be expected ; the subject surveyed under a variety of lights, and measures examined by most numerous combinations, afford only a general result approximating to perspicuity, but nothing which will satisfy a mind habituated to research, or the curiosity of those readers who consult the margin of their map as regularly as the country it contains.

The determination of local situation, by means of longitude and latitude, is at present conducted with so much facility, and is so familiar to our apprehension, that we are liable to forget the difficulties to which the ancient geographers were exposed. Narratives and itineraries were the original guides for determining distances and positions ; these all depended upon measures, the measures of different countries differ, and the measures of the same country vary in different ages, and in the calculation of different authors. This is so peculiarly the case with the Greek stadium, that it is in some degree indefinite, unless appreciated by the age and country of the author, or reduced by some standard applicable to the country under consideration. It is this measure which Arrian has adopted, with what laxity may be readily seen by consulting Mr. d'Anville's Treatise on the Itinerary Measures of the Ancients ; and if, by the assistance of that able geographer, some general estimate can be formed, it is such as must be a result from the whole, and must not be expected to apply in every particular instance. Extraordinary as it is to us who live in times when, by means of the press, new acquisitions of knowledge are diffused throughout Europe in the course

course of a few months, it is a certain fact, that before this communication took place, authors¹⁰⁸ of the same age in different countries knew as little of each other's discoveries as if they had not existed. Arrian and Ptolemy are nearly contemporaries, and yet so far is Arrian from manifesting any knowledge of longitude or latitude as applied by Ptolemy to the plane or the sphere, that he seems ignorant even of the parallel of Eratosthenes, though he is an author quoted by himself. He makes but one attempt to mark the course of the fleet, by mention of the shadow falling to the south¹⁰⁹, and unfortunately the whole track of Nearchus is to the northward of the tropic. But though Arrian has conveyed or preserved no discovery of this sort, he is still a faithful transcriber from his authorities; the standard measure, therefore, which he has used, we may be assured, is such as he found it in Ptolemy¹¹⁰ and Aristobulus, and the valuation of their stadium becomes the object of inquiry. Mr. d'Anville¹¹¹ says with great justice, that none of the ancient measures require more discussion than the stadium; he specifies four different sorts, and these will admit of variations.

			French Toises ¹¹² .
The Olympian	-	-	94 $\frac{1}{2}$
The Pythian	-	-	125 or 750 feet.
			Feet. Inches.
Xenophon's	-	-	75 3 7
Aristotle's	-	-	51 0 0

The Olympian, or common stadium, is that employed by the generality of writers in the estimation of eight to a Roman mile;

¹⁰⁸ Gosselin, p. 27.

¹⁰⁹ This will be noticed in its place.

¹¹⁰ Not the geographer, but the companion of Alexander, and afterwards king of Egypt.

¹¹¹ Mef. It. p. 85.

¹¹² The French toise or fathom is six feet, and a French foot is to the foot English nearly as 16 to 15.

the Pythian is little noticed; that of Xenophon is taken from the marches of the ten thousand, where thirty stadia are reckoned equal to a parasang; and that of Aristotle, according to Mr. d'Anville, is the stadium adopted by the Macedonians. It requires great confidence in our guide to acquiesce in this assertion, for no stadium of fifty-one toises is mentioned even by Aristotle himself; it is extracted from him by inference, and the inference itself is extraordinary. The circumference of the earth was estimated by Eratosthenes at two hundred and fifty-two thousand¹¹³ stadia, which gives seven hundred to a degree; but Aristotle¹¹⁴ calculates the same circumference at four hundred thousand stadia. This sum divided by three hundred and sixty produces one thousand one hundred and eleven; and if we reckon one thousand one hundred and eleven stadia to a degree, the stadium can contain only fifty-one¹¹⁵ toises. Now the truth seems to require, that we should examine whether Aristotle intended to give a larger world or a less stadium, before we accede to the inference deduced. If, however, we were once persuaded that Aristotle had adopted a stadium of this kind, we might find a philosophical reason for the application of it by Alexander; for his instruction to Beton and Diognetus to employ it in their surveys, and for our finding it in the journal of his officers. The philosopher was the preceptor of Alexander; and if he had any hypothesis of his own to establish, by an admeasurement of a new invention, it is not impossible that the pupil might have adopted the system of his

¹¹³ D'Anv. p. 82. Censorinus Vitruvius, toises and a little more; and that the B. de Sainte Croix, quoting the very passage, should

¹¹⁴ De Cælo, lib. 1. c. 14. D'Anv. p. 83. assert, that Mr. D. makes the stadium fifty toises two feet five inches, and then reckon

¹¹⁵ It is extraordinary that Mr. d'Anville, fifty toises without the fraction. Ex. Crit. Mes. Itin. p. 83, should expressly say, fifty-one p. 103.

master, either from deference to his talents, or from ambition, because it was new.

To confess the truth, when I engaged in this inquiry I regarded lightly the whole of this system; and though I am not now convinced that any such stadium existed, but rather suppose that it is a Greek term applied to an Oriental ¹¹⁶ measure, still the general correspondence of fifty-one toises to the measure of Arrian, be it a stadium or not, does appear, upon the whole, agreeable to fact.

In order to examine this question more intimately, I extracted all the several distances in Pliny ¹¹⁷, d'Anville, and Rennell, from the Caspian Straits to the junction of the Jumna and Ganges; and though this stadium would not accord with Pliny, calculated either way, it approached nearer to Major Rennell's distances, than Mr. d'Anville's own, upon the whole extent of the line; and as Major Rennell is the more correct, the coincidence is still more in its favour.

In pursuing the same mode of comparison through the voyage of Nearchus, though it is not possible to establish a proportion of part to part, or perhaps to measure five hundred stadia in any detached portion of the course with satisfaction, yet so far do the errors correct one another, that it would be ungenerous not to acknowledge Mr. d'Anville's merit in the discovery of this principle, however we may hesitate about the application of it, to the minuter divisions of the voyage.

The distance from the northern mountains where the Indus issues, to its junction with the sea, Arrian estimates, from the account of

¹¹⁶ Tieffenthaler reckons by miles, but his the same? miles are close, equal to $1\frac{2}{3}$ ths of a mile.

¹¹⁷ Great allowances must be made for the What forbids the Macedonians to have done incorrectness of Pliny's numbers.

Eratosthenes,

Eratosthenes, at thirteen¹¹⁸ thousand stadia; the same space on Major Rennell's map gives by the opening of the compasses somewhat more than thirteen degrees of latitude; we have then at once a thousand stadia to a degree, and may well make up an hundred and eleven more, by allowance for the course of the river, or the march of armies; and if, by the same proportion, we measure from the sea to Nicæa, or Jamad on the Chelum, we find somewhat more than nine degrees, or about six hundred and twenty-five miles English, which, with allowance for the course of the river, we may extend to eight hundred and fifty¹¹⁹ or even nine hundred miles.

The second distance given is the coast of the Arabitæ from the harbour of Krocala to the river Araba, estimated by Arrian at a thousand stadia, and measuring by Mr. Dalrymple's scale about seventy-five miles.

The third division is the coast of the Oritæ from the river Araba to Malana, one thousand six hundred stadia according to Arrian, and nearly ninety-eight miles by Mr. Dalrymple's scale.

The fourth division is the coast of the Ichthyophagi from Malana to Badis; that is, from Cape Maran, or Malan, to Cape Jask, which Arrian reckons at ten thousand stadia, but his total and particulars are at variance. Of this coast we have a survey by Lieutenant Robinson, and according to his scale it measures nearly four hundred and eighty miles, a distance more disproportionate to Arrian's stadium than any of his former divisions, for it differs no less than an hundred and forty-five miles; the inaccuracy of which we can only excuse on account of the extreme distress of the fleet.

The fifth division is the coast of Karmania from Cape Jask to the island Keish or Katæa; the number of stadia given by Arrian is

¹¹⁸ Indic. p. 315.

¹¹⁹ Major Rennell reckons the navigation up to Moulton at eight hundred miles.

three thousand seven hundred, but his estimate is lax, and the deduction from it dubious. The coast measures somewhat less than two hundred and eighty miles English by Mr. d'Anville's scale.

The last measure we can ascertain is that of the coast of Persis; and even here Arrian's statement of four thousand four hundred stadia must be augmented by an allowance for four omissions, which cannot make it amount to less than four thousand seven hundred¹²⁰ stadia, between Keish and the river Endian, the Katæa and Arofis of Arrian. Mr. d'Anville's scale makes this space equal to three hundred and twenty-three miles, but from the later information of Mr. Dalrymple's charts there is reason to think it not less than three hundred and fifty miles English.

Upon a recapitulation of these several sums, the account would stand thus:

	Stadia.	Miles English.
From Jamad to the mouth of the Indus	10,000	625
Coast of Arabitæ	1000	75
Oritæ	1600	98
Icthyophagi	10,000	480
Karmania	3700	280
Persis	4700	350
	31,000	1908
Stadia multiplied by fifty-one toises	1,581,000	stadia.
Miles English multiplied by 826 toises	-	1,576,008 stadia.
	1,581,000	
	1,576,008	
Difference	-	4,992 toises.

¹²⁰ It ought to be five thousand eight hundred. See Persis *infra*. But a general estimate only is taken here.

Of these particulars, the first only is reduced by computation, the remaining five are the actual estimates of Arrian, compared with the measures derived from modern observations; and when the result is an error less than five thousand upon upwards of a million and an half, the difference is not worth regarding. I am sensible, however, that several of the modern distances are liable to objection, and I lay no claim to precision on this head; but they were taken in the best manner the charts and maps allowed, without any regard to the issue, and the result permitted to come out in its natural course, without previous accommodation. One circumstance which may appear erroneous, is, in my estimation, the natural means of reconciling the two accounts more nearly to truth; that is, I have reckoned ten degrees of longitude from the Indus to Cape Jask by the same scale as the other distances, which are in reality degrees of latitude; whereas a degree of longitude, in latitude 25° , is in fact about fifty-four miles and an half, instead of sixty-nine and an half. The difference which this causes upon ten degrees is nearly an hundred and fifty miles; but if it be considered that the stadia of Arrian arise from the course of the fleet, while the modern miles are estimated, in some measure, from the opening of the compasses, an hundred and fifty miles upon ten degrees, instead of being an error, is an approximation to truth. Actual precision I affect not, neither do I think the question capable of being reduced to demonstration.

Upon the whole, Mr. d'Anville has performed an essential service to ancient geography, in pointing out a measure of any sort which can enable us to form an estimate of the distances recorded in the journal; and whether it be a stadium of Aristotle, or taken from any standard of the Indians, nay even if it were imaginary, or built
only

only on an analysis of the several measures specified, it is still an object of importance to find this answer upon a space of almost two thousand miles; and that the unavoidable errors which arise upon the reckonings of all navigators, more especially the ancient, can be made to correct each other mutually, and produce a general result which is admissible.

Two considerations arise naturally from the discussion of this subject; the first regards Nearchus, whose estimation rises in proportion, not only to the difficulty, but the length of the voyage. It is no ordinary degree of fortitude which could enable a commander to undertake this expedition in vessels very inadequate to the service, and to explore a coast of this extent, where, if shipwreck were avoided, famine was perpetually to be apprehended.

The second consideration respects the general difficulty of reconciling the measures of different countries; no one has laboured this point with the same diligence and success as d'Anville, and I am obliged to follow his measure in toises, because if I desert it, I can find no guide to direct me; but, in fact, even his measures, however carefully reduced, still leave some obscurity behind. One great cause of this is, that the standards of different countries seldom agree without a fraction, and in ordinary calculations the fraction is disregarded; thus, in reckoning eight Greek stadia to a Roman mile, there is always a deficiency of two jugera, or a third part of a stadium. The Olympian stadium is six hundred feet Greek, the foot Greek is nearly ¹²¹ the same as the foot English; eight stadia, therefore, produce four thousand eight hundred feet; and two jugera, or a third of a stadium added, makes the Roman mile equal to

¹²¹ Here is another fraction. See d'Anville, *Mes. It. on the Foot*, p. 10, &c.

five thousand feet Greek or English. Such is the account of Polybius preserved by Strabo ¹²²; and this, one should think, was intended for precision. But Mr. d'Anville in his *Treatise on the Roman Mile*, and in his *Analysis of Italy*, by a variety of combinations fixes the mile Roman at seven hundred and fifty-six ¹²³ French toises or fathoms; now the French fathom is to the fathom Greek ¹²⁴ or English as sixteen to fifteen ¹²⁵; consequently five thousand feet Greek ought to be equal to four thousand five hundred and thirty-six feet French; and eight hundred and thirty-three Greek fathoms, with a fraction, ought to be equal to seven hundred and fifty-six fathoms French: but the result is not so; for seven hundred and fifty-six fathoms French amount only to eight hundred and six two-fifths Greek fathoms; consequently, either Polybius is not correct, or else d'Anville's calculation has this degree of error. d'Anville, in reality, has paid little attention to the fraction of Polybius.

Another example is, that although Mr. d'Anville regards eight hundred and twenty-six French fathoms as equal to one thousand seven hundred and sixty yards, or a mile English, which is true almost to a fraction ¹²⁶; yet he reckons sixty-nine of our miles to a degree, instead of sixty-nine one-half. It is not meant to insist on these as errors, but to shew the obstacles which interpose in any calculation of extent; and it is remarkable that Chambers's Dictionary, which reckons one thousand seven hundred and sixty yards, or five

¹²² See Strabo, lib. vii. p. 322. Polyb. lib. iii. c. 39. Schweighæuser's Ed. vol. v. p. 576. We have it not in Polybius.

¹²³ With a fraction of two feet two inches

four lines, Mef. It. p. 44.

¹²⁴ The Greek and English foot are nearly the same. Mef. It. p. 70.

¹²⁵ More exactly as 1440 to 1351 $\frac{2}{3}$. Mef.

It. p. 125.

¹²⁶ $2\frac{1}{2}$ feet. Mr. Wales.

thousand

thousand two hundred and eighty feet, to a mile, in order to obtain a comparative view of our mile with that of other countries, has recourse to the Rhinland foot, a foreign measure as well as the toise I have adopted, and the Rhinland feet in an English mile are five thousand four hundred and fifty-four.

Such are the difficulties to encounter in the reduction of the standard measures of different countries; and if in the attempt here made, to obtain a comparative view of Arrian's stadium with the mile of our own country, any common error should occur, I trust it will meet with indulgence; or should it be of magnitude, I console myself in the expectation of its exciting others to examine the subject who are better qualified for the investigation.

AUTHENTICITY OF THE JOURNAL.

X. I SHALL conclude this book with a defence of the journal of Nearchus as preserved by Arrian, which has been condemned as spurious by Dodwell, and impeached in point of veracity by Hardouin¹²⁷ and Huet¹²⁸. The supporters of its credit, however, are Salmasius, Usher, Sainte Croix, Gosselin, and d'Anville; and after the mention of their names, if a new apology should be thought superfluous, I must plead the necessity of defending my own opinion independently of others; for if I had thought the work spurious, I would neither have contributed to support an imposture, nor bestowed the labour of years upon the elucidation of a Romance.

¹²⁷ *Hominis mirare in mendaciis confingendis audaciam.* Hardouin cited by Sainte Croix. *Ex. Critique*, p. 255.

I have not seen Hardouin's edition of Pliny, Croix.

but I learn from Gosselin, that Dodwell assumes all his objections.

¹²⁸ Huet *Com. des Anciens*, p. 349. Sainte

But Nearchus has experienced a fate severe in the extreme; he is joined by Strabo with Daimachus¹²⁹, Megasthenes, and Onesicritus, as a retailer¹³⁰ of fables, in his account of India; and his work has been robbed of its existence, on the authority of Pliny, whose own narrative is far more objectionable. In conducting this charge, Dodwell¹³¹ has not acted generously in prefixing the particular passage of Strabo to the publication of the journal; for as this bears hard upon the veracity of Nearchus, it is prejudging the cause, and ought not to have been introduced without, at the same time, stating the evidence on the contrary side. Justice required it to be noticed that Strabo has copied this journal as evidently as Arrian, and that he is indebted to Nearchus for many facts which, however extraordinary they might appear in his age, have been confirmed by modern observation.

Nearchus, it is true, speaks of an enchanted island, and a miraculous origin of the Ichthyophagi; not indeed with a view to assert the truth of such trash, but to refute it: and if he mentions himself as the only man in the fleet who did not fear enchantment, it may prove his vanity or self-importance, but cannot impeach his veracity.

Two circumstances only occur which can be adduced to support such an imputation; one is, his extravagance in stating¹³² the breadth of the Indus; the other, his error in asserting that at Malana, in November, the sun in the meridian was seen to the north. The former may be rescued from the charge of falsehood, by sup-

¹²⁹ He places Daimachus in the first rank. of Strabo. *Praising nonsense.*
Nearchus and Onesicritus only in the second.

Sainte Croix.

¹³¹ Hudson perhaps, and not Dodwell.

¹³² This charge falls rather upon Arrian.

¹³⁰ Παραψαλλίζοντι; is the strong expression than Nearchus.

posing that it relates to the river in a state of inundation; and if the latter admits of no satisfactory solution, it ought not, as standing alone, to be insisted on, to the invalidation of the whole work. Dodwell, in reality, has paid no attention to these two points, but I exhibit them without fear of the consequences.

The Baron de Sainte Croix has drawn out the arguments of this great critic, and subjoined an answer to each; but as the whole charge rests upon a single line of Pliny, if it can be proved that the passage itself is inconsistent with Pliny's assertion in other places, and that Dodwell has not explained it in a satisfactory manner, not only the principal argument, but all the collateral inductions fall to the ground. Sainte Croix proposes to correct it by a different reading, which turns the negative into an affirmative; a liberty, which, though not supported by authority, may be justifiable in regard to a text so corrupt as Pliny's; but I shall shew that it is incompatible; and therefore, if it is incapable of correction, it must be rejected altogether.

The passage in Pliny¹³³ is this: "The journal of Onesicritus and Nearchus contains neither the names of places where they anchored, nor the measure of distances." Could any one after this suppose, that the following two-and-twenty lines, which comprehend Pliny's extract of the whole voyage, contain little else but the names of places? and these evidently taken, not indeed from Nearchus, nor from the original work of Onesicritus, but from the journal of Onesicritus, published by Juba¹³⁴ the Mauritanian.

¹³³ Onesicriti et Nearchi navigatio nec nomina habet mansionum, nec spatia. Lib. vi. c. 23.

¹³⁴ Indicare convenit quæ prodit Onesicritus

classe Alexandri circumvectus in Mediterranea Persidis ex India, narrata proximè à Juba.

Ibid.

Dodwell

Dodwell feels this inconsistency, and accounts for it by making Pliny say, what he never does say, that there was no *uninterrupted*¹³⁵ series of names, like that preserved in the itineraries of Antoninus, of the Peutingerian tables, &c. What Pliny found in Nearchus shall be considered presently; but that he found the names of places in Juba's Onesicritus his own text proves; and that some of these places, Tuberus, Hytanis, &c. were *mansiones*, or anchorages, is equally evident. He has given no distances it is true; and whether the journal of Onesicritus contained distances¹³⁶ or not, it is impossible to discover; but that Nearchus specified distances appears not only by his work, which in this case is no evidence, but by the testimony of Pliny himself upon several other occasions.

There is in Strabo a passage thrust into his text as strangely as this assertion of Pliny is discordant with the tenor of his assertions. "Nearchus says, he could obtain no native guides or pilots in his course from India to Babylonia, because the coast afforded no places to anchor at", or any inhabitants capable from experience, or knowledge of the navigation, to conduct him."

This passage stands insulated between two others, with which it has no connection whatever; and how it has intruded itself here seems unaccountable. It contains, however, an expression which has some relation to the assertion of Pliny: "Οτι προσόρμους εχεν", because it afforded no *mansiones*. What?—not the journal, but the coast; and some expression of this sort has given rise to Pliny's error.

¹³⁵ Itineraria continuis mansionibus, mansionumque spatiis. Dis. de Avriani Nearchi, p. 134.

¹³⁶ Spatia.

¹³⁷ Προσόρμους Stationes. Strab. p. 732.

But let us consider the passage of Strabo. Might not a second Dodwell quote these very words, to prove that Strabo bears evidence against the authenticity of the journal, which records two pilots, Hydriaces from Mofarna, and Amazenes from Oaraçta? This would make out a stronger case than Pliny's charge amounts to. But the answer is ready; for Strabo contradicts Strabo. He says here, Nearchus had no pilot; and he says afterwards ¹³⁸, Amazenes, governor of Oaraçta, was the pilot from that island up the Gulph.

The ignorance of Pliny himself, or the corrupt state of his text, or the vitiated medium through which he received his information, is such, that it is not easy to discover a relation between the account he gives from Onesicritus and that of Arrian's Nearchus. This also forms one of Dodwell's charges. But whether Onesicritus is the cause of this difference, or whether it originates from the intervention of Juba, it is not irreconcilable with Nearchus; for, with some assistance from Salmasius, I read Arbīs for Nabrus, Tomerus for Tuberus ¹³⁹, Oritæ for Paritæ, Ori gens for Origens, Andanis for Hytanis, Achæmenidas for Achæmedinas, Aradus ¹⁴⁰ for Acrotadus ¹⁴¹, and perhaps Arbīs for ab eis ¹⁴². And if I now accuse Pliny of ignorance, or his text of corruption, could Dodwell himself, if he were living, defend him? Salmasius ¹⁴³ goes still farther; he charges Pliny in direct terms with not knowing the west from the east, and consequently with inverting the order of the tribes on the coast, and he notices a variety of other errors which it is not my business to insist on. These are mentioned merely to shew that the credit of

¹³⁸ P. 767.

¹³⁹ In the margin, Tomberon.

¹⁴⁰ Aradus itself is for Arac-us, Arek or L'Arek.

¹⁴¹ Athithradus.

¹⁴² Abies oppidum.

¹⁴³ Plin. Exercit. p. 1177, et seq.

Pliny's work ought not to be rated so high as to be made the standard for others, or the test of truth.

Another objection Dodwell draws from the reckoning by miles, which are Roman, instead of the Greek stadium, and which, if Pliny had copied from a Greek work, he would probably have adopted. Whether Juba reduced the stadia into miles, or Pliny, I pretend not to ascertain; but that it is the general custom of the latter, whenever he extracts from Greek authors, his whole work will prove; and d'Anville, with his usual penetration, has shewn in a multiplicity of instances that Pliny never considered any variation in this measure; but that, by reckoning indiscriminately eight stadia to the Roman mile, he has incurred errors that are subversive of all geography. D'Anville has had the curiosity to compare several of these computations by miles with the stadia on which they were made, and the result has been, that as soon as the measure of the stadium in the author copied was ascertained, the numbers¹⁴⁴ of Pliny have been reconciled to truth; truth, of which the writer himself was not conscious.

But Pliny asserts, that there are no measures in Nearchus; and whether he copies his extract from Onesicritus or Nearchus, it is confessedly without any measure of distances. This may be evidence against Onesicritus, or at least Juba; but is of no weight in regard to Nearchus, whom, however he may cite in other places, he certainly does not copy in this extract. In other passages, he actually cites the distances of Nearchus. This Dodwell allows; but then he adds, they were not regular or uninterrupted; that they did

¹⁴⁴ The Olympic stadium being eight to a halving Pliny's measures an approach to the mile Roman, and Arrian's stadium fifteen, by real distance is often obtained.

not extend along a whole coast, or all the coasts of the voyage, so that a general estimate might be formed; this is the sort of measure that Arrian's Nearchus presents, and this is a sufficient proof that the work is not genuine. As a general answer to this, it is sufficient to observe, that this uninterrupted series is an invention of Dodwell's, and we allow that Arrian's work does contain this sort of series; but a series commencing at the Indus, and extended to the Euphrates, according generally in its parts, and almost perfectly in its total, with the actual survey of the coast, as established by modern observation, contains such internal evidence of its truth, that it is impossible to be invalidated by any hypothetical argument whatsoever.

This ought to suffice; but I will now adduce the very passages from Pliny cited by Dodwell himself, and make them both bear evidence against their own system. "Nearchus"¹⁴⁵ says, that the "coast of Karmania extends twelve hundred and fifty miles." And again: "Onesicritus"¹⁴⁶ and Nearchus write, that from the Indus "to the Gulph of Persia, and thence from the marshes of the Euphrates to Babylon, are twenty-five miles." In another passage: "From the commencement of Karmania to the river Sabis, an hundred miles; from hence vineyards and arable lands to Andanis, twenty-five miles more." With the account of these distances, corrupted as the text is beyond all conception, I have no concern; but that measures are specified in each separate instance is apparent, and those the measures of Nearchus. In whatever manner, therefore,

¹⁴⁵ Gosselin, p. 25; who reads 2500 for 25.

¹⁴⁶ Plin. lib. vi. c. 24. Dodwell, Dis. p. 132.

I quote from the Franckfort edition as Dodwell does; and though I know attempts have been since made to correct these readings,

the correction arises frequently from calculation, and not from MSS. I have many corrections prepared; but the object here is to shew the *spatia* of Nearchus, not to correct. See d'Anville, *passim*.

the testimony of Pliny is to be adduced, for the purpose of invalidating the journal of Nearchus, that testimony destroys itself; and whether the passage containing it can be interpreted or not, whether it be depraved or correct, whether genuine or spurious, it matters little; for an evidence not consistent is no evidence at all.

Dodwell himself conjectures, that Pliny had seen the original journal of Nearchus, as well as the publication of Juba, because, in the catalogue of the writers whom he consulted, he mentions the name of Nearchus; and from hence it is concluded, that there are no measures in the original, or that Pliny found none; but it has been proved already that, in the abstract of the voyage, Pliny follows Onesicritus; and it is now demonstrated that, upon reference to Nearchus in other instances, the text of Pliny proves the existence of those very distances he denies. Fair reasoning, therefore, demanded the assent of Dodwell to the solution of Usher¹⁴⁷, who supposes these distances to have existed in the original, and to have been omitted by Juba; and if this supposition will not make Pliny consistent, why is he to be supported? or why is the existence of other authors to depend upon his suffrage?

In constructing this defence of Nearchus, I am supported by Goffelin¹⁴⁸ and Sainte Croix¹⁴⁹; and had I been acquainted with those authors previous to my own researches, I should have thought it sufficient perhaps to have adopted their arguments without any comment of my own; as it is, I have been proud of obtaining their concurrence, and upon the revival of this argument have made use of their assistance without reserve. D'Anville¹⁵⁰ has thought it a sufficient answer to all objections to introduce a part of the narra-

¹⁴⁷ Anno 4388.

¹⁴⁸ *Geographie des Grecs*, p. 25.

¹⁴⁹ *Examin. Critique*, p. 250, et seq.

¹⁵⁰ Sainte Croix, *Ex. Crit.* p. 256.

tive itself, and present it to the reader in the same form as the author gives it; and, in fact, the internal evidence of the work speaks more forcibly for itself than all the arguments which can be adduced in its favour. The circumstantial detail of minute facts, the delineation of the coast with the same features it bears at present, the description of manners, customs, and habits, all characteristic of the natives; the peculiarity of the climate, seasons, winds, and natural productions, all bespeak a knowledge which could have been obtained from actual inspection only, and all present a work which Antiphanes, Euemerus, Iambulus, Euthymanes¹⁵¹, and all the forgers of antiquity could not have put together.

If it were requisite to pursue this inquiry farther, Salmasius affords a copious catalogue of Pliny's errors in regard to the whole coast, and whether those errors arise from the authors he consulted, or his manner of consultation; whether we are to impute them to himself, or to the mutilated and corrupt state of the manuscripts as they came into the hands of his editors; it is impossible that a single passage in such a work should be maintained, in order to depreciate, nay, to annihilate a journal, in which accuracy is as conspicuous as the inaccuracy of Pliny is demonstrable. I shall adduce one proof only, and leave numerous others to the contemplation of those who build systems upon his authority. "The limit¹⁵² between Karmania and Armozeia is a promontory; but some place the Arbii between them, whose whole coast extends four hundred and two miles." This is his assertion in the twenty-fifth chapter; in the twenty-third,

¹⁵¹ Impostors enumerated by Dodwell, *Dis.* p. 139, &c.

¹⁵² Lib. vi. c. 25. A promontorio Carmanis junguntur Armozei; quidam interpo-

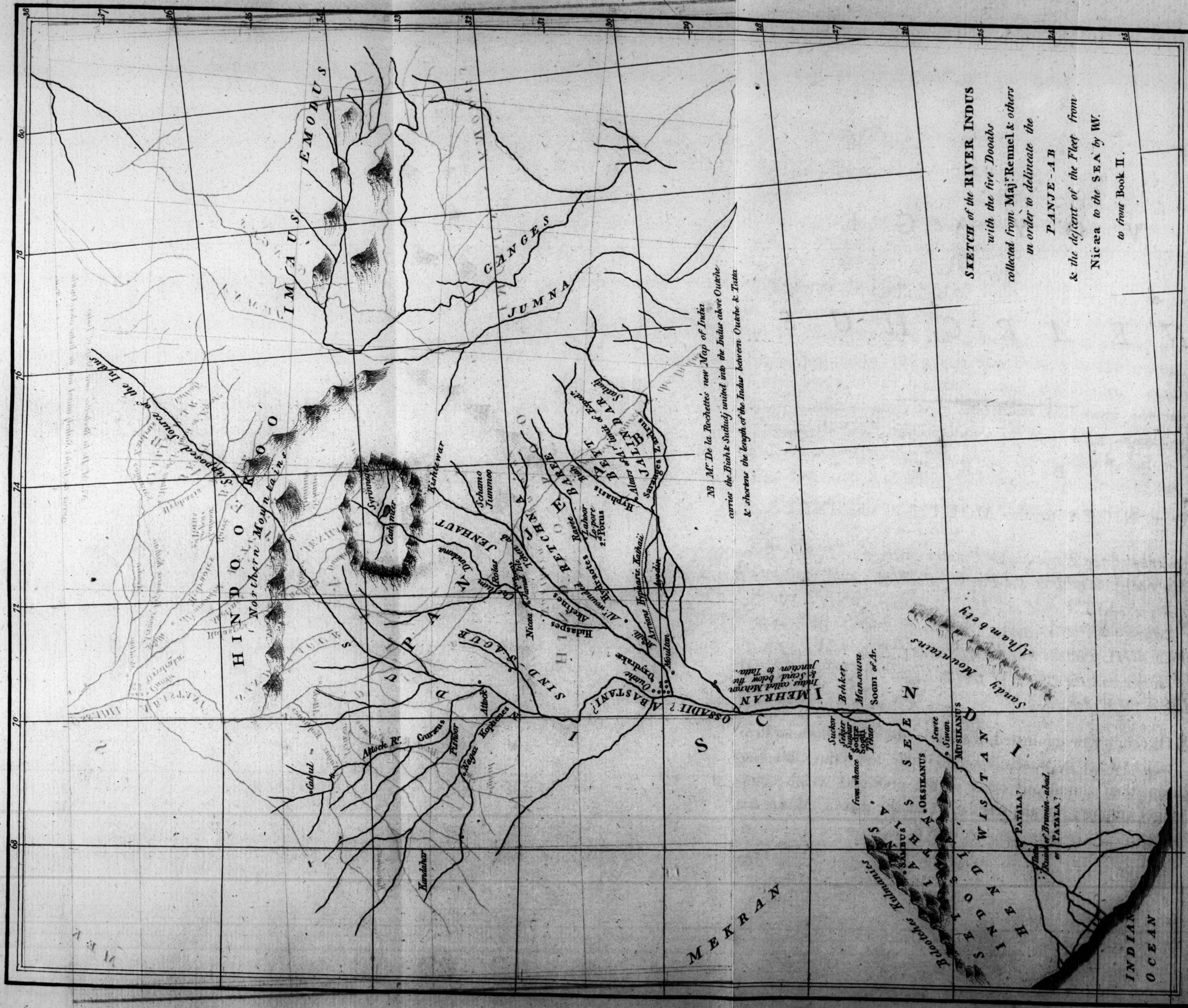
nunt Arbios, cccclii mill. pass. toto littore.

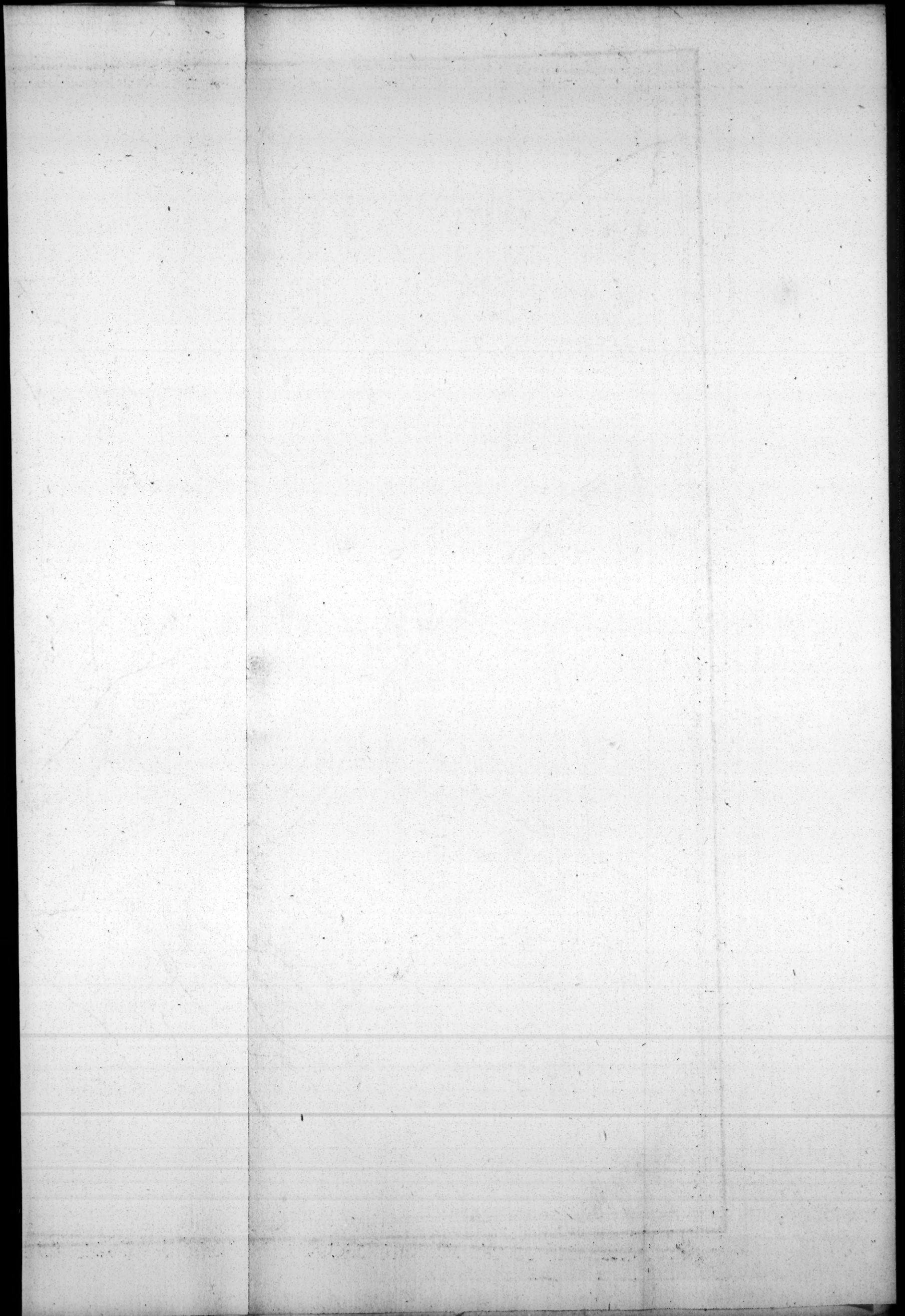
In margine, cccclxxi.

I know not whether I render *toto littore* properly; but it cannot depend on *interponunt*.

he says, *their coast is two hundred miles long*. But whatever its extent may be, it is more than six hundred miles from this promontory, Armozon. Such is the magnitude of this error. On the contrary, Nearchus places the Arbii, or Arabitæ, between the Indus and the Sommeany; and a Cape Arabah in the neighbourhood still preserves their name. He says, their coast is about one hundred miles long; and so we find it. He mentions Armozeia as a district of Karmania; it continues so to this day. He marks the low tract on the coast and the mountains inland; so do the best geographers and travellers¹³³ at the present hour. Where there is so much information on one side, and a total want of it on the other, it is not difficult to form a judgment upon the merits of either party.

¹³³ Pietro della Vallé.





THE VOYAGE OF NEARCHUS.

BOOK II.

From NICÆA to the MOUTH of the INDUS.

I. *Geography of the Panje-ab, or Country on the five Eastern Sources of the Indus; Wealth of the People; Population.*—II. *Order of the five Rivers.*—III. *Oxydracæ, Malli, Abastani, Ofsadii.*—IV. *Sogdi, at Behker.*—V. *Musicanus, Oxycanus, Sambus in Sewee, or Sibwan.*—VI. *Pattala and the Pattalene; Tatta considered both as a Province and the Delta of the Indus.*—VII. *Progress of Alexander to the Westward.*

THE country denominated the Panje-ab', from the five streams which water it, was, till within these few years, less known in Europe than almost any other of the provinces which compose the Mogol empire; but the translation of the Ayeen Akbari has at



length removed the obscurity, and admitted us into a knowledge of the situation, division, revenues, and population of the provinces, the geography of the country, and the course of the rivers, with a degree of precision which reconciles the accounts of the best ancient geographers, and corrects the errors of the moderns. To the encouragement given by the East India Company, and the industry and abilities of the gentlemen employed in its service, we owe this excellent work, among a numerous collection of others, which are tending fast to dispel the gloom that hung over the mythology of the Hindoos, and the history of their conquerors. And whatever revolutions may hereafter attend our own commerce or empire in the East, these sources of knowledge opened to the world are an acquisition not subject to vicissitude, but will perpetuate the honour of all who have been concerned in the patronage or execution of them, as long as the English language shall be read.

This Register of Hindostan, composed by Abu'l Fazil the minister of Akbar, commented as it is by Major Rennell, will form the basis of the following geographical research; and though it may not be perfectly correct in all its parts, its general correspondence with the classical history of the Macedonian conquests is such, as to establish incontestably the fidelity of Arrian and Strabo; and assure us that we have, in their writings, the report of persons actually partakers in the expedition.

Another work has been consulted, that of Tieffenthaler, a German, and a missionary of the Romish church, long resident in Hindostan, published by Bernouilli at Berlin, and commented by Anquetil du Perron. This missionary evidently possessed the language, and drew from the source of Ayeen Akbari. His work contains much
solid

solid information²; but it is so ill put together by the editor, and accompanied with so much other matter not always pertinent to the subject, that it cannot be either read or extracted with facility.

From these and other sources of information it appears, that the Panje-ab is still³ one of the richest countries of Hindostan; and though both its wealth, population, and power are doubtless exaggerated by the Greeks, it is reasonable to allow that they were all superior, at the time of the Macedonian conquest, to any period of prosperity, since the Tartars of different tribes have harassed the country with invasion, or reduced it by conquest. It is not possible to assert that there had been no invasion of this sort previous to the age of Alexander; for in the account⁴ of the Kathæi there is evidently an appearance of Tartar⁵ manners⁶, as well as a suspicion, from their name of a relation to the inhabitants of Kathai⁷; there are likewise instances of Chiefs, not Hindoo, reigning over Hindoos; and the account of several little independent republics, which frequently occurs, bespeaks something that is more characteristic of Tartar than Hindoo policy. Notwithstanding, however, these shades of difference, the aggregate of the tribes appears perfectly Hindoo, from the time that Alexander passed the Indus, till his return to the Oritæ on the ocean.

² The work consists of three volumes. The first contains Tieffenthaler; the second, Disquisitions by Anquetil du Perron; and the third is a Translation of M. Rennell's Memoir, first edition.

³ Previous to the irruption of Nadir Shah. From that period the Mogol empire can hardly be said to exist.

⁴ Rennell supposes them to be the Kattri, or Kattriri tribe.

⁵ Not only in their superior courage, but in their manner of defence, consisting in a triple row of waggons.

⁶ They bear one stamp of Indian manners; i. e. they burn their widows. Strab. p. 699.

⁷ Kathai was a name brought into Europe by our early travellers, who entered Tartary on the north of Asia, and always found a Kitai, Kathai, &c. See Carpin. Rubruquis, in Bergeron's Collection.

It is confessed on all hands that Hindoo policy, both civil and religious, favours population, agriculture, and commerce; and though it will be said, upon the authority of Arrian himself⁸, that the Macedonians found no gold in India, if it is a fact, it can only be alleged to prove, not the want of wealth, but of the actual metal. But the fact is suspicious; for the fable⁹ of gold turned up by ants proves the existence of gold in the country; and the tribes westward¹⁰ of the Indus subject to Persia, as early as the reign of Darius, paid their tribute¹¹ in gold. Be this, however, as it may in respect to gold, the wealth of the people in those early ages is self-evident, from works still extant of the most extraordinary magnificence. Their temples, excavations, and public buildings, not to be seen without astonishment by foreigners, and by the natives attributed to the agency of supernatural¹² powers, all bespeak a command both of labour and riches, which can be rivalled only by the illustrious relics of the Egyptians.

This testimony of wealth and power is in all probability long anterior to the age of Alexander, and not in the country visited by him; but in his age, at the sources of the Indus, we obtain such authentic evidence of superior riches and population, as cannot be contemplated without astonishment. Greece itself was one of the most populous countries of Europe; and whatever country could,

⁸ Lib. v. p. 201.

⁹ Some modern naturalists have supposed that the white ant, the monster of his genus, if he met with a vein, might turn up gold. But the tale of the ancients must be a fable. Onesicritus saw not the ant indeed, but his skin; it was as large as a fox's.

¹⁰ Arrian hardly allows the tribes westward of the Indus to be Indian.

¹¹ Herodotus, lib. iii. p. 246 and 249.

¹² The age of Anakim (as Mr. Bryant very justly styles it), antecedent to all history, still exhibits its magnificence in every country where it is sought for; from the Pyramids of Egypt to the Druidical masses in Britain.

If we attribute their works to natural power, their numbers are incredible; if to mechanic power, their knowledge is equally incomprehensible.

from its appearance, suggest to Greeks an idea of superior population, must exceed in this respect all ordinary calculation.

That they did exaggerate in attributing five thousand cities as large as Cos¹³, to the territories overrun by the Macedonians, is past doubt; yet that the view of the country itself suggested this exaggeration is likewise manifest. But let us consider the country of Porus at the time it was invaded by Alexander, and before the enlargement of his power. It consisted apparently of what the Ayeen Akbari calls the Doo-ab¹⁴ of Jenhat, or the tract between the two rivers Hydaspes and Akesines, not more than forty¹⁵ miles wide at a medium, and from an hundred to an hundred and fifty miles long. Out of such a territory as this, without¹⁶ allies, Porus raised an army consisting of four thousand horse, three hundred chariots, and thirty thousand foot, under his own command, besides an advanced party under his son, of an hundred and twenty chariots, with two thousand horse, making at the lowest, with due allowance for those employed about the chariots and elephants, forty thousand¹⁷ men. And if we now compare this force with the country which was to raise, support, and maintain it, what judgment ought we to form of the population of India? Porus, however, was only the head of one out of many tribes in this country of the Panje-ab; Abissares, a powerful Chief, lay on the north; the Glausæ, on the east; a second Porus, on the Hydraotes or Ravee; and the Kathæi lower to the south, between that river and the Hyphasis: adjacent to these,

¹³ See *supra*; and the extraordinary reading in Pliny. Cominus for Co minus.

¹⁴ Doo-ab, two rivers or waters.

¹⁵ Strabo says it contained three hundred cities! Lib. xv. 698.

¹⁶ Embisares; the Abissares of Arrian was to join him, but failed. Diodor. lib. xvii. p. 229.

¹⁷ Diodorus says fifty thousand. Ibid.

Sopithes;

Sopithes; with the Malli towards the mouth of the Hydraotes; and the Oxydracæ, at the angle between the Akesines and the Indus; besides the Abastani and Ossadii, for whom we can hardly find a scite.

Small as the territory of these several tribes must have been, the numbers recorded of those who submitted, who were slain or subdued, excites our incredulity at every step; and little remains but, after due allowance for exaggeration, to admit a population of the greatest magnitude possible.

Numbers to this extent, surpassing those of Greece, and equalling those of China¹⁸, depended, as far as we can judge, not upon that abominable practice of exposing children, legalised¹⁹ in both those countries; for this is a system that seems never to have entered into the conception of Indian legislators, civil or religious. Existence, however lightly prized by Indian principles²⁰, appears to have multiplied faster by the mildness of government, security from oppression, and the encouragement of maxims political and moral, than by any of those infringements on the law of nature; and though perhaps

¹⁸ The population of China calculated at two hundred and forty millions by P. Mailla, and that of Japan by Kæmpfer and Thornberg, may make us indulgent to the extravagance of the Greeks. If the cities and towns of China stand as thick throughout the empire, as on the canals navigated by the English, from the Yellow River to Pekin, it does not appear how there can be space for agriculture to feed them. See Æneas Anderson. See also the accounts of the Jesuits in Du Halde. *Lettres Edifiantes*, &c. &c.

¹⁹ In Greece a parent was allowed to expose every child; in China every female, and every third male. The legislators seem to have re-

moved the obstacles to marriage, by holding out an immunity from the burden of a family, and to have trusted to the affections of nature for rearing one. This policy appears to have answered in these two instances. But population is not to be purchased by outraging nature, however anxious all legislators may be to promote it.—I ask pardon,—not all. For the legislature of France has discovered that population may be too great, and has in consequence taken effectual measures to diminish it. The discovery is imputed to Mirabeau.

²⁰ It is an Hindoo sentiment, that rest is better than action, sleep better than rest, and death best of all.

too much is always imputed to the purity of remote ages, and we value too highly systems, the defects of which we can no longer discover, it will not be thought unreasonable to attribute great effects to Indian policy and manners, and still greater to the security of life and property: in ancient times at least, these were as complete in practice as the theory appears in the Gentoo code, or the institutes²¹ of Akbar. To this it may be objected, that a tribe of military forms one part of the Hindoo system; and that war implies oppression. Against this, however, the same code provides a remedy. The produce of the field, the work of the artisan, the city without walls, and the defenceless village, are declared sacred and inviolable²². Those only who used the sword were to perish by the sword. I find in Bernier one instance of this Hindoo law reduced into practice by the Mahometan family still reigning; which occurred, when Aurungzebe was contending with his brothers for the empire. If I could have found in ancient history that the practice and the theory were in unison, I should have thought it a sufficient ground to account for the wealth and population of the richest nation upon earth. To prevent war is impossible; but to strip it of its terrors by adopting something similar to this, as a law of nations²³, is a subject for the contemplation of the legislator, of the philosopher, and of every individual, moral or religious.

²¹ The mode of letting the lands and fixing the tribute is one of the most curious ordinances in the Ayeen Akbari.

²² See also Arrian, Ind. p. 325.

²³ This was a favourite idea of Dr. Franklin's, who obtained some articles of a similar tendency to be introduced into a treaty between America and Prussia. Unfortunately for the theory, they are two nations least likely of all others to try the effect practically.

We no longer eat our conquered enemies, like the New Zealanders or native Americans; we do not murder them, like the Lacedæmonians; or reduce them to slavery, like the Romans. Increasing knowledge, mutual fears and conveniences, morality and religion, have contributed to abolish these practices. What great refinement of speculation is there in carrying this system still farther?

I have entered upon this discussion in order to vindicate the classical historians from the charge of falsehood, by accounting in some measure for the numerous tribes with which this country swarmed. Another cause of this may be found in the nature of the country itself; for the five streams which water it are navigable, during the summer season at least, a thousand miles²⁴ from the mouth of the Indus; and the Chelum or Hydaspes is said to extend this navigation two hundred miles higher into Cashmeer, from which province there is a communication with Thibet, Boudtan, and Tartary.

The western sources connect with Candahar and Cabul; but as these are not our concern at present, it will be sufficient to notice that Lahore on the Ravee, the principal city of the Panje-ab, is the centre²⁵ of an immense commerce between that country and Dehli; and that one of the more eastern branches either did communicate²⁶, or was intended to communicate, by means of a canal, with one of the sources of the Ganges, and must have formed an inland navigation not exceeded perhaps by those of China. These circumstances are sufficient to prove the commercial spirit of the country; and, in consonance with this, Abu'l Fazil informs us, that forty²⁷ thousand vessels were employed on the Indus, which, even in the decline of commerce, are said by Captain Hamilton to be two hundred tons burden, and the most convenient he had seen for the accommodation of the passenger and the merchant.

²⁴ Ten degrees, by the opening of the compasses, from the mouth of the Indus to the southern mountains of Cashmeer. Rennell makes it, by the river, eight hundred miles to Moultan. By the same estimate, we might reckon four hundred to Cashmeer, and

two hundred above the mountains.

²⁵ Previous to Nadir Shah.

²⁶ Rennell.

²⁷ Tavernier, Thevenot, Goetz, Bernier, Tieffenthaler, Rennell, &c. &c. all unite in testifying the magnitude of this commerce.

If such has been the state of commerce²⁸ under the empire of the Mahometans, it is but reasonable to assume a much more flourishing appearance of it in the early ages, while the Hindoo policy was in full vigour, uninterrupted by foreign intruders, and unremitting in its encouragement and protection of the people. The population is one proof of this, and the fleet collected by Alexander is another. The wealth²⁹ he accumulated from his conquest is no where specified; but Maghmoud³⁰ the Ghaznavide tyrant, the earliest Mahometan invader of whom we have an historical account, is represented as enriched with such an enormity³¹ of plunder as to make the ravages of Timour and Nadir Shah appear moderate.

The revenue of all these provinces or soobahs, as settled by Akbar, is exhibited in the Ayeen Akbari; but large as they are, both essentially and relatively, they appear reasonable in comparison of the ancient accounts, whether Greek or Hindoo; and these accounts, though exaggerated, have doubtless some foundation in fact. All these provinces were overrun by the Macedonians, except Cash-

²⁸ This soobah is very populous, highly cultivated, and exceedingly healthy. Ayeen Akb, p. 32. vol. ii. The revenue is 559,458,423 dams, which, at forty dams to the rupee, is equal to 1,748,307 l. sterling, from a country about three hundred and forty miles long, and one hundred and sixty in breadth.

²⁹ There is a passage in Q. Curtius and Athenæus which describes three hundred beasts in the train of Alexander laden with treasure, in which it appears as if the conqueror had carried with him the plunder of Persia out of mere ostentation. But if this assertion has any foundation, it ought to be the conveyance of the Indian treasures; a circumstance similar to the accounts of Nadir Shah. This fact, how-

ever, as supported by no historian of credit, is utterly dubious.

³⁰ The scite of Ghazna has been determined only within these few years by Mr. Forster. See Rennell's Mem. p. 114. And from its proximity to Paropamisus, the mountains of Candahar, his army probably consisted of Aghvans, the same tribe that put an end to the Dynasty of the Sefis in Persia, so late as one thousand seven hundred and twenty. The commander of that invasion wrote his name also Maghmoud like the Ghaznavide; it is probably the provincial dialect for Mohammed.

³¹ Maurice,

meer³², the paradise of the Hindoos, consisting of a large valley in the northern mountains. But Lahore, Moulton, and Tatta³³, which form the modern soobahs, are the scene of those transactions we are now to enter upon. That we may display these in their proper light, and be enabled to follow the operations of the fleet, it is necessary first to shew the series of the rivers which Mr. d'Anville has mistaken³⁴, and which must be reduced to order before a clear view of the expedition can be obtained. In the performance of this service, I follow the authority of Mr. Rennell, not merely by retailing his Memoir, or commenting on his Map, but by shewing that our ancient authorities are consistent with truth.

PANJE-AB, OR PANJ-AB.

II. THE five rivers of the Panje-ab, which fall into the Indus, are in their order commencing from the west, the Hydaspes, the Akesines, the Hydraotes, the Hyphasis, and the Saranges. Besides these, Arrian, from Megasthenes, brings the Sinarus into the Hydaspes, the Tootapus into the Akesines, and the Neudrus³⁵ into the Saranges; but of these two last he professes to speak with diffidence, as they were not seen by the Macedonians; and the Sinarus and Tootapus are

³² Abissares is supposed by M. Rennell to be the Chief of a tribe in the northern part of the Doo-ab of Jenhat, called Kakares. But there is nothing very repugnant in supposing him Chief of Cashmeer. He sent presents to Alexander, but never came in person. And if he dwelt beyond the mountains, that may be a reason why the conqueror did not invade his country.

The whole of this is mere conjecture I allow; but as the initial Ab intimates his territory to be on a river, by searching for the ety-

mology of *Iffar*, I am satisfied his residence would be discoverable.

³³ Tatta was united with Moulton by Akbar.

³⁴ There is no real authority but Rennell's Persian map, the Ayeen Akbari, and Cheref-eddin. Fraser, Hanway, and Jones's Nadir Shah will afford little assistance to an inquirer. Hanway is total error.

³⁵ It is not quite evident whether into the Saranges or Akesines.

mentioned

mentioned no more. Of these five streams the Akesines is the principal, being joined by the Hydaspes on the west, and by the Hydraotes from the east, receiving also (as Arrian asserts) both the Hyphasis, Saranges, and Neudrus, from the east, before it falls into the Indus. Ptolemy causes no small confusion, both to his commentators, and to Mercator who has framed his maps, by giving the preference to the Hydaspes, and making the name of that river prevail over the others. But Arrian maintains the honour of the Akesines, asserting expressly, that all the others lose their name on uniting with him; and that he preserves this pre-eminence till he joins the Indus. This is the more probable, because the modern Chen-ab, his representative, claims the same privilege³⁶ to the present day.

But if Ptolemy is mistaken in one particular, he is in harmony with Arrian and Strabo in giving the same series or succession; and Pliny, who drops the mention of some intermediate streams, has nothing contradictory to their order. In this respect, therefore, ancient geography is uniform; and if the moderns dissent, either from one another or from consistency, we must impute their mistake to that abundance of appellations which all these rivers severally obtain, either in different parts of their course, or from being mentioned by various names in various languages, Mogol, Tartar, Persian, or Hindoo.

The Hydaspes is the first in order, corresponding with the modern Chelum, and flowing between the Indus on the west, and the Akesines on the east. The variety of names cannot be better exemplified than in this instance. Ptolemy will serve however, not less upon this occasion than on all the others, as the point of connection between

³⁶ Tieffenthaler. Ayeen Akbari.

the Macedonian orthography and the Shankreet, dispersing light on both sides, and shining himself like a luminary in the centre.

Hydaspes,	—	Arrian, Strabo, Pliny, &c. &c.
Bidaspes,	—	Ptolemy.
Bedusta,	—	Shankreet, according to the Ayeen Akbari.
Vetasta,	—	Shankreet, Tieffenthaler.
Dindana,	—	below the mountains of Cashmeer, Tieffenthaler.
Chelum,	—	Persian or Mogol, Cheref-eddin.
Zalam,	}	Forster, &c.
Jalam,		
Djalam,		
Zeloom,	—	between Aurungabad and Rotas, Tieffenthaler.
Jamad,	{	from an island so named in one part of its course, Tieffenthaler.
Behut,	—	Hindustan, Ayeen Akbari.

Such is the catalogue, consisting of twelve³⁷ names for a single stream, and sufficient to account for any error in consequence of their variety; but Zeloom, Zalam, Jalam, Djalam, Chelum, are the same sound confused by the Persian Dj. Dindana is a name in one part of its course, and Jamad in another. Behut is the appellation

³⁷ La diversité que l'on remarque dans les differens auteurs, ou écrivains, où il est mention de ces rivières, a de quoi étonner, et n'est pas une médiocre embarras pour quiconque veut débrouiller cette matière. Differens noms à la même rivière ont contribué à y mettre de la confusion. Eclaircissemens sur la Carte de l'Inde, p. 28.

See in consequence, the error of this great geographer. In the same page he says, the Shantrou succeeds the Tchen-av; and afterwards, the lower part of the Shantrou bears the name of Jamad, from an isle of that name in the river. Now in reality the Shantrou and Tchen-av are the same, and Jamad the isle is in the Hydaspes, or Chelum.

used by the Mogols; evidently connected³⁸ with the Bedusta or Vetusta of the Shankreet, the Bidaspes or Hydaspes of the Greeks, all dependent on the relation between the vowels A and U in Oriental orthography, or on the connection of the consonants B and V with the aspirate.

This stream is made the Indus of Arrian by d'Anville³⁹, and vitiates his whole series in consequence. But it is too clearly defined by the Ayeen Akbari to admit of any future error. According to that register it rises in Cashmeer, and is navigable by vessels of two hundred tons quite up to Syrin-nagar, the capital of that province. Where Arrian would bring his Sinarus into this stream, whether from the east or west, whether within the limits⁴⁰ of Cashmeer, or below the mountains, is undiscoverable; but his authority is from Megasthenes, and not from the Macedonians. Neither knew any thing of Cashmeer; and yet in Sinarus I think that I trace some relation to the Syrin-nagar⁴¹ river, as it is called, within the limits of that province. However this may be, the river, after passing the mountains and descending to the Pergunnah of Shoor, joins the Akesines or Chen-ab, and twenty cose⁴² lower receives the Ravee, or Hy-

draotes,

³⁸ All sounds received by the ear, and committed to writing, differ. What is more apparently different than the French Taiti and the English Otaheite? Compare them, and the resemblance is clear. Ta-ee-tee, o-Ta-hee-tee.

³⁹ And carried into the Attock, which is the real Indus, without joining the Akesines. See his Map, Asie, 1. Partie. et Antiq. Geograph.

⁴⁰ It should rather seem below the mountains; for he says in *Oxydracis*, Outche. But there is no river there but such as we are acquainted with.

⁴¹ Nagar, nagur, nagoor, is a general ter-

mination, like poor, patam, &c. as Chander-nagur. Syrin-nagar is therefore the town, fort, or city, on the Syrin.

Syrin and Sinar, Sinar-us, approximate sufficiently; and why not Abissinarus for Abissares?

⁴² The principle of the cose is found in the Ayeen Akbari, vol. ii. p. 213. The breadth of eight barley-corns husked

makes	—	1 inch.
24 inches	—	1 cubit or duff.
4 duffs	—	1 dund.
1000 dunds	—	1 cose.
4 cose	—	1 jowjun.

But

draotes, at Zufferabad; when the three streams united, after a farther course of sixty cose, form a junction with the Indus at Outche, the Oxydracæ of the Macedonians. This is the account of the Ayeen Akbari, differing indeed from Arrian, as will appear when we come to mention the Akesines. From the same authority we learn, that the Doo-ab, or tract between the Indus and Hydaspes, is styled Sind-sagur by the Mogols; and its breadth is estimated at sixty cose, or an hundred and fourteen miles. The medium of this breadth is, as far as I can discover, taken at the point where the road crosses the Doo-ab, and as such, is to be estimated in the accounts that follow. The whole breadth of the Panje-ab, including all the Doo-abs from the Indus to the Satludj, is given at an hundred and eighty cose, or about three hundred and fifty⁴³ miles; the specific measures make the cose an hundred and eighty-five.

Cheref-eddin's account does not differ⁴⁴ much from the Ayeen Akbari; for he mentions, that the Chelum rises from the fountain Vir, or Syrin-nagar, and after passing the mountains, takes the name of Dindana⁴⁵ and Jamad. It then passes into the Genave, and above Moulton both join the Ravee, which passes a second Moulton.

But the cose varies in India, as the mile or league in Europe. The royal cose is the shortest, and the standard for military mensuration. Tieffenthaler reckons thirty-two cose to a degree; and Rennell, p. 5, values a cose at one mile and nine-tenths, i. e. one hundred cose is equal to one hundred and ninety miles. Tieffenthaler, who wrote in Latin, styled these *milliaria*. The cose is probably a very ancient measure, and, according to Strabo, marked as the miles were on the Roman roads. See d'Anville *Mes. Itiner.*

and the term *ποσειδιον*. I doubt, however, whether it is Hindoo. See a curious treatise on Indian measures. *Lettres Edif. tom. xv. 173, et seqq.* If I could find any Shanskreer account of a measure equivalent to Arrian's stadium, I should conclude he had used the stadium, as Tieffenthaler adopts the mile.

⁴³ Ayeen Akbari. Tieffenthaler.

⁴⁴ Only in respect to the Biah.

⁴⁵ That the Dindana and Chelum are the same appears, vol. iii. p. 156. Cheref-eddin.

The

The united stream is afterwards joined by the Biah, and the whole body falls into the Indus at Outche. The mention of two Moultons accords with our knowledge of the ancient Malli and modern Moul-tan; and it is remarkable that Cheref-eddin⁴⁶ should agree with Arrian in making the Hyphasis or Biah join the Chen-ab before that river joins the Indus.

The second river is the

Akesines of	-	—	Arrian, Strabo, Pliny, Q. Curtius, &c.
Chen-ab,	-	—	Hindostan, Ayeen Akbari.
Jen-aub,	-	}	Persian, Rennell.
Chen-aub,	-		
Gen-ave,	-	—	Cheref-eddin.
Tchen-av,	-	—	d'Anville.
Tchan-dar-Bargar,	—	—	Shanfkreet, Tieffenthaler.
Chun-der-Bahka,	—	—	Shanfkreet, Ayeen Akbari.
San-da-Bala,	-	—	Ptolemy.
Shan-trou,	-	—	Bernier, d'Anville.

The mere inspection of these ten names will shew the relation of them severally, as connected by the syllable Tchen, except the Akesines; and I cannot help thinking but that it is an error of the ear, or owing to a desire of mollifying a barbarous sound, that the Greeks wrote Ake-sin-es for A-chen-ises, or⁴⁷ A-cesin-es for Ab-tchen-es. I find a tribe on this river, mentioned by Justin⁴⁸, styled Hia-cen-fanas, in which the prevailing syllable is preserved;

⁴⁶ See Cheref-eddin. vol. iii. p. 161.

⁴⁷ Kesin for Ctchen or Djen, considering that the Greeks have no Ch in their lan-

guage, is as near as they could approach to the sound.

⁴⁸ Lib. xii. c. 9.

and the initial letter, coming to us through the medium of the Persian Dj, causes all the variety exhibited in Djen, Djan, Tschan⁴⁹, Tschén, Chan, Chen, Chin, Jen, Gen, Tchun⁵⁰, Chun, Shan, San. It is to the credit of Ptolemy that he preserves this sound; and whether we take his San-dab-ala from San-ab, or Chan-ab, or the whole Sanda-bala from Chanda-bahka, the correspondence with the Shanskrete is equally visible. The Ayeen Akbari⁵¹ asserts, that Chunder and Bahka are two streams which issue from the same mountain in the range called Cutwar or Kishtewar, which unite their waters and their names, and in the latter of these, I conclude, we are to look for the Tootapus⁵² of Arrian, which, from the authority of Megasthenes, he brings into the Akesines at an early part of his course.

The Akesines is confessed, both by ancients and moderns, to be the principal of the Panje-ab streams, and his reception of the Hy-

⁴⁹ There is a term Dsjienk, which occurs under a variety of forms as an adjunct to rivers in Mekran and Sufiana. (See Cherefeddin, vol. ii. *sub fine*. Otter, vol. i. p. 409.) From what language derived I know not; but from its frequent recurrence, it assuredly signifies a *river* or *water*. Whether Tschén, Chen, &c. are related to this sound, which is expressed Kienk, Chienk, Dienk, Denke, &c. I dare not pronounce, but I suspect a relationship between the two; and if this should admit of proof, Tschén is *the river*, in some ancient dialect, with the addition of the Persian Ab, which signifies the same. Tschén-ab is therefore only River, River. It is an hypothesis of many etymologists, that all names of rivers are in some original language expressive of water. (See Whitaker's Hist. of Manchester.) And if so, Tschén-ab is perfectly

similar to our own usage, when we say the river *Dee*, or the river *Avon*, for both by interpretation are, River, River. On this ground it might be argued, that Ab-Tschén and Tschén-ab are equivalent; and that Arrian's Akesines is only Ab-Kesin, Ab-Kesin, Ab-Chén, that is, Chén-ab reversed. I do not insist on this, as I tread on Oriental ground with hesitation; but I state it as a problem for resolution, by those who are better versed in Eastern learning.

⁵⁰ The Persians generally pronounce *a*, before *m* or *n*, like *u*. Frazer, Nadir Shah, p. 72.

⁵¹ Tieffenthaler, Rennell.

⁵² I assume this form, rather than follow the Latin orthography of the Greek diphthong, in hopes of obtaining more readily an Oriental etymology. Tootapus is Toot-ab.

daspes or Chelum from the west, with the Hydraotes or Ravee from the east, is confirmed by all. Whether he receives the Biah and Satludj also, or whether they join the Indus without communicating with the Akesines, is still a geographical problem. Arrian⁵³ every where asserts, that the Hyphasis, Saranges, and Neudrus, that is, the Biah, Satludj, and Caul, join the Akesines, either by themselves or by the intervention of the Hydraotes. But the Ayeen Akbari brings them independently⁵⁴ into the Indus, considerably below Moultan; and this is the authority of M. Rennell⁵⁵. Tieffenthaler, if I understand him right, is not consistent with himself; for in one place⁵⁶ he agrees with Rennell and the Ayeen Akbari, in another he makes the Biah and the Satludj join the Ravee. M. Rennell is justified in preferring the authority of the Ayeen Akbari to Arrian, as Arrian confesses himself that, beyond the Hyphasis or Biah, he has no positive⁵⁷ evidence to rely on, and he does not follow his Macedonian guides, but Megasthenes⁵⁸. Mr. de la Rochette has adhered to d'Anville in this particular, and, in the disposition of Ayjodin with the parts adjacent, accords better with Cheref-eddin's march of Timour, than any other arrangement I have seen. It is extraordinary that d'Anville, who is more likely to err on the side of etymology than by a neglect of it, should not

⁵³ PP. 236. 240. 249. 252. Lib. vi. p. 238. et seq.

⁵⁴ Rather by implication than directly. See vol. ii. p. 136.

⁵⁵ Probably with the addition of his Persian MS. Map.

⁵⁶ Vol. i. p. 118, compared with p. 115.

⁵⁷ P. 316.

⁵⁸ Megasthenes was sent into India by Seleucus, and reached the court of Sandracota. I am misled by etymology, or I discover the name of a city, and a prince denominated from that city, in Sandracota. It appears to me to be only Santrou-Cotta, the town or city on the Shantrou.

have observed that Shan-trou⁵⁹ rested upon the same root as Shan-ab, his own Tchen-av ; but I have mentioned this error too often.

The prerogative of this river, in preserving its name till it joins the Indus, has been already noticed ; and Arrian adds, that it is the only stream of the Panje-ab not fordable at any season of the year, which all the others are, after the cessation of the rains. The province, or doo-ab, between the Hydaspes or Chelum and this stream, is called Jenhut⁶⁰, and its breadth is estimated only at twenty coss, or about six-and-thirty miles ; although we are here to look for the kingdom of Porus, and a population which could produce an army of forty thousand men. Extravagant as this may appear, it is confirmed by the Ayeen Akbari ; for in an age when we have supposed the population to be diminished, Abu'l Fazil asserts, that the quota of troops for Jenhut is three thousand seven hundred and thirty horse, forty-four thousand two hundred foot, with a revenue of 203,164 l. sterling.

The third river is

The Hydraotes of	—	Arrian.
Hyarotes,	- —	Strabo, Q. Curtius.
Iyrawutti ⁶¹ ,	- —	Shanfkreet, Ayeen Akbari.
Ivaratti ⁶¹ ,	- —	Shanfkreet, Tieffenthaler.
Rhuadis,	- —	Ptolemy.
Adris, Adaris,	—	Commentators of Ptolemy.
Ravi, Ravee,	—	Persian, or Hindostan.

⁵⁹ I have not met with the name Shantrou except in Bernier and d'Anville ; but I have no doubt of its being a native corruption from Chander-ab, Chander-av, Shandrav, Shantrav, Shantrow.

⁶⁰ Ayeen Akbari, p. 132. These names

are all Mogol distinctions, assigned by Akbar.

⁶¹ The transposition of the syllables in proper names, so often appealed to in this work, cannot be better exemplified than in these two words, both being professedly from the Shanfkreet.

From this catalogue it is apparent that the termination Ravatti, Rawatti, or Rawutti, furnishes the Rhuadis of Ptolemy, and the Ravee of the moderns, as Iyrawutti is the Hyarotes of Strabo, and the Hydraotes of Arrian. It is better known at present as the river of Lahore, which renders the error of d'Anville more extraordinary, in placing Lahore ⁶² on the Akefines, a city of almost equal celebrity with Dehli itself. The roads from Cabul, Candahar, Attock, and Moulton, all unite at Lahore, as a centre between each of them respectively and the capital: and the celebrated avenue extending upwards of three hundred miles from this city to Dehli, which exists perhaps no longer except in the page of history, bespeaks not merely a communication, but the importance of the intercourse, and the numbers, as much as the luxury, of those who travelled by this route. The communication on the west from Nicæa to this city, explored by Alexander, is probably still open. For though the road from Attock passes ⁶³ at present through Rotas in a more northerly line, as I shall hereafter shew the relation between Jamad and Nicæa, a sovereignty at that island, whether tributary or independent, would naturally open a road from thence to a capital like Lahore; and a line from Attock drawn through Jamad being more direct than through Rotas, it is not impossible that it was the more early means of intercourse. That Alexander really reached Lahore, and that it existed in his time, there is some degree of proof; for the name written at an early period Lehauer ⁶⁴, was still more anciently Lack-onore and Lo-pore; and Onore ⁶⁵, Pore, being terminations ex-

⁶² See the Map prefixed to the *Antiquité Geographique des Indes*; but by his Map of Asia, première partie, it is evident he supposes the Akefines to be the modern Ravee.

⁶³ Rennell.

⁶⁴ Ayeen Akbari. Tieffenthaler, vol. i. p. 102.

⁶⁵ Onoor, Can-onoor, Melia-poor, Nurser-poor, &c. &c.

pressive of a city or fortress, will afford a reason why Alexander found one Por-us on the Hydaspes, and a second on the Hydraotes, both deriving their name from their government, as Taxiles from Taxila, and both losing their native distinction by an omission of the Greeks. In Lo-pore therefore, the original name of Lahore, there is some ground for conjecture that we have the city of the second Porus; and the antiquity of this place is confirmed by a remark of Tieffenthaler's, that one of its twelve gates is still called Taxili; he says it is on the west; and doubtless the road passing through it led to the Taxila of the Macedonians, as the Cabul and Dehli gates lead to those cities. Bernier came from Dehli to this city in the suite of an Omra attendant upon Aurungzebe, and had he been as curious in collecting historical and geographical matter as his knowledge of the Persian language qualified him to be, much information might have been derived from him; but his page is filled with accounts of Mogol grandeur, and the only material circumstance he relates of Lahore is, its decline in consequence of the Ravee having changed its course, and now running at some miles distance; a fact confirmed by Tavernier, and perhaps not unusual with rivers⁶⁶ that overflow with periodical rains. Tieffenthaler mentions a canal which has since been cut from the river to the city, but whether it has in consequence recovered its splendour is very dubious. It was still a place of importance in Nadir Shah's time, but betrayed into his hands; and is now in possession of the Siks⁶⁷,

⁶⁶ The Indus itself, below Moultan, exhibits the same phenomenon almost every year. See *infra*.

⁶⁷ The Siks equally disown Brahma and Mahomet. They profess equality and the

worship of one God. Their sect is numerous; but the doctrine of equality prevents their union, and renders their efforts weak and desultory. Mr. Hastings.

the deists and democrats of Hindoostan in the present age. Cherefeddin, whose geography is correct, wherever he attends Timour, is mistaken in confounding the Biah and the Ravee, an error which I could not be convinced he had committed till I found that he placed Lahore⁶⁸ upon the Biah. The Ravee, according to Bernier, is as wide as the Loire, but this depends upon the season when it is seen; the vessels, however, built upon it at Lahore are large, and fit for the sea⁶⁹, not indeed from their manner of building, but their bulk and capacity.

The province between the Chen-ab and the Ravee is called Retchna, and is thirty cose in breadth.

The fourth river is the

Hyphasis of	-	—	Arrian.
Hypasis,	-	—	Pliny, lib. vi. 17.
Hypanis,	-	—	Strabo, lib. xv.
Beascha,	-	—	Shanskreet, Tieffenthaler.
Beypascha,	-	—	Shanskreet, Ayeen Akbari.
Bibasis, or Bipasis,	-	—	Ptolemy.
Beah, Bea, Beand, Biah,	-	—	Persian or Hindoostan.

The Bipasis of Ptolemy is, upon this occasion, once more the centre of relation between the Beypascha of the Shanskreet and the Hyphasis of the Macedonians, who constantly fix the limits of their expedition at this stream. The error of Mr. d'Anville, who makes this stream the last of his series, has unfortunately betrayed Ber-

⁶⁸ Vol. iii. p. 154. French edition.

Timour was not at Lahore himself; he passed into India on the south, and returned on

the north of it; but he plundered it by his lieutenants, *ibid.*

⁶⁹ Ayeen Akbari, vol. i. p. 191.

nouilli, Tieffenthaler⁷⁰, and de la Rochette, into the adoption of his system. This is the more extraordinary, as they all acknowledge the Setledj; and yet could not discover that the fourth stream, whatever it should prove to be, must be the boundary of the expedition.

This river⁷¹ rises in the Pergunnah of Shoor, from that part of the northern range called Keloo, and joins the Setledj or Satludj, near Feerouzpoor. Below the junction, the stream is divided again near Ayjodin into four branches called Har, Haray, Doond, and Noornny. These four unite once more as they approach Moulton, and, according to Rennell, fall into the Indus about fifty miles below that city. Arrian, as has been already noticed, brings them into the Chen-ab or Akesines, whose authority is followed by de la Rochette. What modern confirmation of this he has found I do not discover, except Cheref-eddin⁷², whose evidence indeed is direct; for the Ayeen Akbari, though it seems by implication to favour Rennell's opinion, fails of precision at the very moment it is most wanted. Between the Ravee and this river, Alexander subdued the Kathæi, but in a position lower down than the course of the road from Lahore, as I collect from Strabo's confounding of the Kathæi⁷³

⁷⁰ Tieffent. vol. i. p. 53; but contradicts himself, p. 55.

⁷¹ Ayeen Akbari, vol. ii. p. 136.

⁷² The evidence of Cheref-eddin would be perfect if Timour had been on the spot, or if the author himself had not confounded the Ravee with the Biah. But from his mention of both in this place, as an evidence of report, it is still very strong. The river of Cashmeer, he says, takes various names, as the Dindana and Jamad, and joins the Gen-ave (Chen-ab) above Moulton. When they have passed

Moulton, they receive the Ravee, which passes by a second Moulton. Ensuite le fleuve Biah les joint, et tous auprès de la ville d'Outcha se jettant dans le grand fleuve Indus nommé Absend, i. e. Ab-send, fleuve Send, ou Scind.

Cheref eddin plainly marks two Moultons here. Is it a fluctuation between the province and the city? or are we to suppose there were different heads of the district like the towns of the Malli in the time of Alexander?

⁷³ Καθαίοι. Kathai,

with

with Sopithes, who was evidently near the junction of the rivers, wherever that may hereafter be placed.

Here the troops refused to proceed any farther; while Alexander, who had obtained intelligence of a powerful kingdom on the Ganges, sufficiently correspondent with the different seats of modern empire, was still unsatiated with conquest. The mutiny, however, was the disobedience of Macedonians, grief and fullen refusal, without turbulence; and the concessions of the king to their requests evince, that his discretion was as indubitable as his valour. Here, therefore, he built his altars at the limit of his progress, and hence he returned back to the Hydaspes, on which he was to embark with his troops, and to explore the Indus to its issue.

Mr. de la Rochette has placed these altars on the Setledj, and at the point where the road from Lahore to Dehli crosses that river; but they were on the Biah, not the Setledj, and lower down than that road, if the position of the Kathael is right.

The province between the Ravée and the Biah is called Bari, and is only seventeen coss in breadth. The number of troops, which is above an hundred and sixty thousand⁷⁴, with the magnitude of the revenue, bespeak a population capable of producing the resistance Alexander⁷⁵ experienced in this country. Here was the termination of his conquests, and I am not called upon to proceed farther; but as there is only one river remaining to complete the series, it will not be unacceptable to the reader to see the connection of the whole.

⁷⁴ Ayceen Akbari.

⁷⁵ Seventeen thousand were slain at Sangala, the capital, and upwards of seventy thousand were taken in the city. Ar. 227.

lib. v. The breadth of this Doo-ab is measured by the road, but the province itself is

The fifth river is the Saranga, or Saranges, of **Arrian**.
 Hefudrus, **Pliny**.
 Zadadrus, Zaradrus⁷⁶; Zardrus, **Ptolemy**.
 Schatooder, Shetooder, **Shankreet. Ayeen Akbari**.
 Satludj, **Tieffenthaler**.
 Setlooge, **Tieffenthaler**.
 Satluz, **Tieffenthaler**.
 Setlej, Setledge, **Rennell**.
 Seteluj, **Perfian. Hindostan**.

In the Shetooder of the Shankreet we find the Hefoodrus of Pliny, and in the Satludj or Satluz, the Zardrus of Ptolemy. Anquetil du Perron informs us, that Zardluz is the proper orthography of this name in Persian, and that this word written in Greek characters would be necessarily Zardrus. The source of this stream is far to the north-east, in the mountains of Ghaloor; descending from which, it runs to Feerouzpoor, where it receives the Biah, and with that falls either into the Chen-ab or into the Indus itself, as already noticed. Arrian mentions a river called Neudrus, which joins the Saranges⁷⁷, but without any attributes to enable us to discover what it is. It may be the Caul, which, according to de la Rochette, is derived from the Setledj, and falls into it again; or, according to others, has a separate source, and joins the Setledj from the north-east. As Arrian professes his doubt of every thing beyond the Hyphasis, and we are not concerned in reality with the Setledj at all, it is not necessary to pursue the inquiry. I shall only add,

⁷⁶ Here is another transposition of the syllables.

⁷⁷ Perhaps rather into the Ravee.

that

that Ptolemy joins the Zardrus with the Bipafis, that is, the Setledj with the Biah, and brings their united stream, not into the Indus, but the Chen-ab⁷⁸.

The province between the Biah and Setledj is styled Beyt Jalindhar, in breadth fifty cöse.

Such is the detail of the five rivers; and when the Ayeen Akbari calls them six, either in the province of Lahore or Moulton, it always includes the Indus, without any respect to the Setledj, as consisting of two streams. It will be of some importance to geography, by this enumeration of names, to prevent future mistakes; not that I apprehend I have completed the catalogue, for it is probable that future travellers, in crossing this country in different latitudes, may collect many more local appellations, but an outline is drawn which may be filled up as future discovery shall afford the means. No consequence, indeed, will attach to this secondary object; but it is a matter of curiosity, at least, to connect the Macedonian appellations, disfigured as they are, with the native names of rivers, and to give a specimen of what may be pursued to advantage by those who are proficient in Oriental learning.

But after conducting these five streams individually into the Indus, some general observations are necessary to complete our purpose. The sources of all the streams which fall into the main channel of the Indus are to the south of that great ridge called Hindoo Khoo, which separates Tartary from Hindostan; the Indus itself, according to Major Rennell and the Ayeen Akbari, cuts that chain⁷⁹; like the Ganges and Burhampooter; its ultimate source is

⁷⁸ This will not appear either in Ptolemy or the Hydaspes, and not the Chen-ab, or Ake. Mercator's Map, because he makes the Hydaspes prevail over the Akefines, and there. ⁷⁹ Arrian asserts the contrary. Lib. IV. Afore the stream he brings them into is called p. 199.

still unknown. The chain of mountains coming from Candahar, the Paropamisus of the ancients, and the seat of the modern Agwhans or Afghans, takes a sweep to the north as far as Cabul, and furnishes those streams which fall into the Indus from the west. If this chain is cut by the Indus, it towers again on the eastern side of that river, and, dividing itself to encircle Cashmeer, emits the Chelum or Hydaspes from its northern ridge, while its southern chain sends forth the Akelines, Hydraotes, and Hyphasis. The mountains which cover Cashmeer on the east appear to branch again into two ridges, called by Cheref-eddin Tchamou, and by the moderns Jummoo, between which the route of Timour lies in his return⁸⁰ from Dehli; and within which, it is probable, the sources of the Setledj will be found.

The rains which fall in these mountains swell all the rivers which join the Indus from the west, or from the east, about the summer solstice⁸¹; and from this circumstance both Alexander and Timour, who planned a summer campaign, experienced all the inconveniences of winter. The limits of these rains may be fixed at Moul-tan; and from Moul-tan, the Indus, like the Nile, flows towards the sea through a country rarely refreshed by the genial shower or nutritious dew, and condemned to everlasting sterility⁸², except a narrow margin which is moistened by the stream.

⁸⁰ This is the reason that on his return we find him at the Genave, (Chen-ab,) without notice of the more eastern Panje-ab rivers.

⁸¹ The rains cease in October, and a cold north wind blows five or six months. Bernier. No rain in Scindi. See Strabo, lib. xv. p. 691, who says, the rains in the higher country begin early in spring, and last till the setting of Arcturus (autumn).

⁸² The country on both sides the Indus is hardly capable of cultivation at any distance from the stream. On the stream itself we find pastures and herdsmen; but beyond these pastures, on the eastern side, is a desert terminated by the Sand mountains, the residence of the Ashambetees or Jams. On the western side, another desert extending to the range of rocks inhabited by the Belootches.

In conducting the navigation of the fleet through this desert tract, it is difficult to find a situation for the tribes which Alexander found to conquer. Some scattered lights are to be collected from the Ayeen Akbari, d'Anville, and Rennell; but unless we can suppose a better government and greater industry to have produced a superior population, to that which modern accounts will justify, the conquest³³ must have been of small importance to the conqueror.

If I could hope for health and leisure to attend this conqueror through his several campaigns, I am persuaded that the geographical accuracy of Arrian, whenever he follows Ptolemy and Aristobolus, is as demonstrable to the westward of the Indus, as towards the east; but with that at present we are not concerned. My intention has been to prove, that the series of rivers in the Panje-ab is the same in Arrian, Ptolemy, and the Ayeen Akbari, and that the names preserved in Ptolemy are all correspondent to the Shanskreet. This is what the demonstration required, at a period when the Shanskreet was the native language, unmixed by foreign communication, and uncorrupted, by Greek, Tartar, or Persian invaders. I conclude, therefore, that the following enumeration is verified:

<i>Arrian.</i>	<i>Ptolemy.</i>	<i>Shanskreet.</i>
Hydaspes,	Bidaspes,	Bidasta, or Bedusta,
A-kefin-es,	Sandabala,	Chandar-Bahka,
Hydraotes,	Rhuadis,	Iyrawutti,
Hyphasis,	Bipasis,	Beypasha,
Saranges,	Zadadrus,	Shatooder, or Satludj.

³³ Behker and Sewee only occur in this tract. Their relative value is considered hereafter.

The

NIK AIA.

NIKAIA, OR NICÆA.

III. AFTER establishing the several rivers with their mutual connection and relation, let us return to the Hydaspes or Chelum, to search for the position of Nicæa. The discovery is not difficult; for though the present road from Attock to Lahore crosses the Chelum at Rotas, and it would have been agreeable to the plan already laid down to have conducted Alexander by this route, we are directed by Arrian with so much precision to another point, that we can hardly be mistaken. On a bend of the Hydaspes, he says, there is an island surrounded by the river, with a second branch, or artificial canal, on the eastern side. Below the southern point of this island, and the reunion of the river, Porus had drawn up his forces on the eastern side; Alexander, leaving Craterus with a considerable body of forces opposed to Porus, marched in the night to effect a passage, under cover of this island, to the opposite shore. He embarked himself in a galley, and conveyed his troops in boats brought over land from the Indus. He had scarcely disembarked them, when he found himself encircled by another channel, which, being swelled by the solstitial rains, he forded with great difficulty; then, turning to his right, he followed the course of the stream, and, after defeating the son of Porus, advanced to the spot where the king himself had drawn up his forces opposite to Craterus. Here the battle was fought, and here must be the site of Nicæa²⁴.

²⁴ Major Rennell, in his Memoir, p. 93, concludes that Alexander passed the Chelum at Rotas; but in the accompanying map places Nicæa lower down - 28 miles.
Jamad, by de la Rochette, 60 miles.
by Rennell's first Map, 65 miles.
by Rennell's second Map, 28 miles.

Arrian says, Alexander marched one hundred and fifty stadia from his camp to the

island; by a rude calculation I make it nine miles. As the stadium of Arrian has already been made to appear very indefinite, I can only say it is not here the stadium of eight to a mile; for if it were, Alexander must have marched twice 18 miles, transported an army across a river, and fought two battles, in the space of about eighteen or twenty hours.

The distance from his camp on the western side of the river to the head of the island is given by Arrian, and may be estimated at nine miles. If, therefore, we can find an island in modern geography which will correspond with this of Arrian, we have a precise point given, and have only to fix Nicæa at the requisite distance below. Such an island is found, and situated on a bend of the Chelum or Hydaspes, about twenty-eight miles below Rotas, and in a more direct line between Attock and Lahore than Rotas itself. The road probably passed at this place in earlier times, and has been diverted to Rotas only because the island afforded a strong post, which in India is always a source of exaction. This island is called Jamad by de la Rochette, and by Major Rennell in his second Map; in his first Map it contains a fort named Shah Buldien's Fort, equivalent, I conclude, to Cheref-eddin's, Chehabeddin. It is remarkable that Chehabeddin⁸⁶ should oppose the progress of Timour, at the distance of sixteen centuries, almost in the very spot where Porus had encountered Alexander. From the resistance of Chehabeddin, it may be presumed that the island has the advantage of high ground and woods, as described by Arrian; and that it was a place of importance⁸⁷ in Timour's time cannot be doubted; for the river, in this part of its course at least, took the name of Jamad, and if there was a road to it from Attock, there consequently was another from this fort to Lahore.

⁸⁵ Vol. iii. p. 48. French edition.

⁸⁶ Chehabeddin Mobarec étoit prince d'une île de la rivière de Jamad. Il avoit un grand nombre de domestiques et d'officiers, et il étoit puissant en bien et en meubles. Cheref-eddin, tom. iii. p. 48.

To this the translator, Petit de la Croix,

subjoins a note.

Jamad. Rivière pres de l'Indus. C'est la suite de la rivière de Dendana, qui vient de Cachmir.

⁸⁷ And p. 49. Se confiant à la force de son île, qu'il croyoit inaccessible.

Nicaea being the point at which the voyage commences, I shall settle the longitude and latitude of this place by Mr. Goffelin's method of correcting Ptolemy; and as it is one object of this work to reconcile ancient geography with modern, the system of Mr. Goffelin is worthy of consideration.

His system I am not bound to adopt in all its parts, neither do I believe that the geography of Eratosthenes was founded, as he asserts, upon an earlier and better hypothesis, whether Chaldean, Egyptian, or Greek. I have much hesitation also in acceding to M. Goffelin's opinion, that a stadium is the seven hundredth⁸⁸ part of a degree of a great circle, for I reckon it much nearer to a six hundredth part, and that on the authority of Mr. d'Anville.

The Olympic stadium is usually estimated at six hundred⁸⁹ Greek feet, and the Greek foot is very nearly equal to the English. Eight⁹⁰ of these stadia are reckoned equivalent to a Roman mile, and there are nearly nine in a mile English. But as my authorities are French, the calculation will be more easily stated in toises than English measures. The French toise, however, being six feet, and the foot French to the foot English nearly as sixteen to fifteen, the reduction may be easily made by any one who wishes to compare it with the

⁸⁸ This, however, is said to be the estimation of Eratosthenes.

⁸⁹ Some authors make it six hundred and twenty-five. D'Anville Mesures Itin. p. 70. See Blair's Geog. p. 67.

⁹⁰ Eight one-third according to Polybius, Strabo, p. 322; in which there must be some error, or something not understood.

D'Anville never values this one-third of Polybius in his calculation.

600 feet = $94\frac{1}{2}$ French toises.

$94\frac{1}{2}$	$94\frac{1}{2}$
8	9
752	846
4	$4\frac{1}{2}$
756 toises.	850 $\frac{1}{2}$ toises:
D'Anville's Rom. mile.]	

but the mile English, according to d'Anville, is eight hundred and twenty-six toises, so that nine Olympic stadia are equal to a mile English, and twenty-four one-half toises over.

English mile. Let us observe next, that d'Anville reckons seventy-five miles Roman as equal to a degree of a great circle, and then let us inquire whether five hundred, six hundred, or seven hundred stadia correspond best with this estimate of a degree.

The Roman mile of 75	to a degree produces	56,700 toises.
The stadium of 500	————	47,250
stadium of 600	————	56,700
stadium of 700	————	66,150

Hence it appears, that the computation by six hundred stadia to a degree contains exactly the same number of toises as the estimate by the Roman mile, which in fact it ought to do. Why, therefore, Mr. Goffelin assumes the stadium of seven hundred to a degree, in order to correct the longitudes of Ptolemy, does not appear.

His system is this, that the chart of Eratosthenes was upon a plain⁹¹, in which his principal parallel passed through Rhodes; but the chart of Ptolemy was upon a sphere, and as he reckoned five hundred stadia equal to a degree of a great circle, he allowed four hundred to a degree on the parallel of Rhodes. But Mr. Goffelin says, that Ptolemy ought to have allowed five hundred stadia to a degree on the parallel of Rhodes (for that was the estimation of Eratosthenes himself), and to have taken seven hundred stadia to a degree at the equator.

The method Mr. Goffelin takes in consequence of this, to correct the longitudes of Ptolemy, is, to multiply the longitude by five hundred, and divide the produce by seven hundred, in order to reduce stadia of five hundred in a degree to those of seven hundred. The success of

⁹¹ Mr. Dalrymple approves of plain, or Mercator's charts, and the rule given for calculating the true longitude according to the

diminution of the degree of longitude in proportion to the distance from the equator.

this experiment is extraordinary; and having explained the principle it is founded on, I must leave the defence of it to Mr. Goffelin himself. This is, however, the mode of calculation in regulating the longitude of the principal places, adopted in the following pages.

It is well known that the latitudes of Ptolemy are more correct than his longitudes; and this arose, according to Mr. Goffelin, from his taking seven hundred stadia to a degree of latitude, while he assumed only five hundred to a degree of longitude. It is not requisite for me to enter into this question, or to inform the reader that a degree of every great circle is equal; but another difficulty I had to encounter, which was to obtain an accurate statement of the difference of longitude between the Fortunate Islands, or Ferro, (which is the first meridian of Ptolemy,) and the meridian of Greenwich or Paris, on which most of the charts I was concerned with were founded. I referred this question to Mr. de la Rochette⁹², whose knowledge of the science qualifies him to solve problems of much greater intricacy, and his solution I have printed in the Appendix⁹³. The result of it is this, that Ptolemy makes the difference of longitude between Ferro and London twenty degrees, while the real difference, according to Maskeline's Tables, is $17^{\circ} 40' 13''$. This is consequently the allowance to be made; and instead of $3^{\circ} 30'$, which Ptolemy gives between London and Paris, the real difference is, $2^{\circ} 25' 37''$.

With these preparations before me, I make the first experiment upon Nicæa on the Hydaspes, that is, the isle of Jamad in the Chelum, from whence I take the first departure of the fleet.

⁹² Mr. de la Rochette is the author of a variety of maps published by Faden; particularly two, one of India and one of the Pro-pontis, which place him high in the rank of modern geographers. He has composed also

a map for the conquests of Alexander, which I would have obtained for this work if I had dared to venture on the purchase.

⁹³ See Appendix, No. II.

Ptolemy has not Nicæa in his series, but Bucephala only⁹⁹; as Bucephala, however, is supposed to have been on the opposite side of the river, the difference is inconsiderable.

Longitude of Jamad, by Major Rennell, $71^{\circ} 50'$ east of Greenwich.
 Longitude of Ferro, - - - $17^{\circ} 40'$ west.
 True difference of longitude between } $89^{\circ} 30' 0''$
 Jamad and Ferro, - - -
 Longitude by Ptolemy, - - - $125^{\circ} 30' 0''$

Mr. Goffelin's method of correction follows:

Longitude of Ptolemy, $125^{\circ} \frac{1}{2}$
 500 stadia.

62500

250

Stadia, 700 | 62750 | 89

5600

6750

6300

450

60 minutes.

700 | 27000 | 38

2100

6000

5600

400 reducible to seconds.

⁹⁹ See Cellarius, tom. ii. 529.

This process I have thought would not be unacceptable, as I have frequently stood in need of similar assistance myself; and upon my submitting it to Mr. Wales, seeing that $89^{\circ} 38'$ was only eight minutes more than the true difference of longitude, his observation was, "That Mr. Goffelin's method of correction succeeded wonderfully in this instance; but that he did not immediately recollect whether Ptolemy had any where said, that he assumed five hundred stadia for a degree of a great circle." For this I have likewise searched Ptolemy in vain; and am forced to conclude, that it is deduced by inference rather than found by Mr. Goffelin, and that the inference was formed upon a comparison of the plain chart of Eratosthenes, with the spherical chart of Ptolemy.

N I C Æ A.

Longitude by Ptolemy, from Ferro,	-	-	$125^{\circ} 30' 0''$
Longitude of Ptolemy, reduced to Greenwich,	}		$89^{\circ} 38' 0''$
and corrected by Mr. Goffelin's method,		-	
Longitude by Rennell,	-	-	$89^{\circ} 30' 0''$
Latitude by Ptolemy,	-	-	$30^{\circ} 20' 0''$
Latitude by Rennell,	-	-	$31^{\circ} 40' 0''$
Latitude by de la Rochette,	-	-	$31^{\circ} 30' 0''$

At Nicæa²³, therefore, we fix the departure of the fleet on the twenty-third of October, in the year three hundred and twenty-seven before Christ. The views of Alexander in preparing the fleet and undertaking the navigation have been sufficiently noticed

²³ Diodorus makes the departure from the Akesines. Lib. xvii. 234.

already;

already; but the anxiety which oppressed his mind cannot be exhibited better than in the description of Arrian⁹⁶, or the language of Nearchus himself.

He dreaded, says the historian, the length of the voyage, the danger of a desert coast, the want of harbours, and the difficulty of supplies; he was fearful lest a failure should tarnish the splendour of his former actions; still, however, the desire of attempting something new and extraordinary prevailed. But who was to command such an expedition? Who was capable of inspiring the men with confidence; or persuading them, that in undertaking such a service they were not abandoned to destruction? Such, says Nearchus, was the perturbation of Alexander when he ordered me to attend him, and consulted me on the choice of a commander. "One," said he, "excuses himself because he thinks the danger insuperable; others "are unfit for the service from timidity; others think of nothing "but how to get home; and many I cannot approve for a variety "of other reasons." "Upon hearing this," says Nearchus, "I "offered myself for the command, and promised the king that, "under the protection of God", I would conduct the fleet safe "into the gulph of Persia, if the sea were navigable, and the un- "dertaking within the power of man to perform." Alexander hesitated; he loved Nearchus, and admired him the more for the promptitude of his offer; but how could he expose such a friend to the distresses and hazard of such a voyage! Nearchus still persisted in his proposal, and intreated the acceptance of his services. At

⁹⁶ Arrian introduces this account after the fleet had reached Pattala; but as Nearchus commanded during the passage down the Indus, it is much more probable that the consultation took place before his first appointment than after he was actually in command.

⁹⁷ Τὸ ὅτι. Arrian was the disciple of Epictetus.

length the king, who had probably consulted him with the hope that his spirit would prompt him to make the offer, consented, and named him admiral of the fleet. The appointment answered his expectation; for the men destined to the embarkation no longer considered the expedition as desperate, when they found a man so much in the king's favour and confidence was to be the commander, and one whom they knew he would not have exposed to inevitable danger. Alacrity succeeded to terror, the ships were equipped, not only with what was necessary, but with great splendour; the officers vying with each other who should collect the best men for the service, and have his complement⁹⁸ most effective. Success was anticipated, and despair subdued.

The next concern was the appointment of the officers, and a list of names is given which it is evident does not specify those who performed the voyage, but such as had a temporary command only during the passage down the river. The amount is thirty-three, which specifies the number⁹⁹ of galleys; but of these we cannot certify that any circumnavigated the coast, except Archias.

MACEDONIANS.

1. Hephæstion, son of Amyntor.
2. Leonnatus, — Eunus.
3. Lyfimachus, — Agathocles.
4. Afclepiodorus, — Timander.
5. Archon, — Clinias.

⁹⁸ Ἐμπληρώματα.

⁹⁹ It is true that Arrian, p. 236, says, the Triaconteri were eighty; but under that title, as a general one, he probably includes the Hemiolia, or half-decked vessels. The He-

miolia are half-decked vessels, according to Gronovius; but Casaubon ad Athen. lib. v. p. 203, says, they were rowed with two banks of oars from the head to the mast, and from the mast aft, with one. Not. p. 737.

MACEDONIANS.

MACEDONIANS.

6. Demonicus, son of Athenæus.
7. Archias, — Anaxidotus.
8. Ophellas, — Silenus.
9. Timanthes, — Pantiades.

These were all citizens of Pella.

10. Nearchus, son of Androtimnus.
11. Lampedon, — Larichus.
12. Androsthenes, — Callistratus.

Citizens of Amphipolis.

13. Craterus, son of Alexander.
14. Perdiccas, — Orontes.

Natives of Orestes.

15. Ptolemy, son of Lagus.
16. Aristonous, — Pifæus.

Natives of Eordæa.

17. Metron, son of Epicharmus.
18. Nicarchides, — Simus.

Natives of Pydna.

19. Attalus, son of Andromenes.

Native of Stymphæa.

20. Peucestas, son of Alexander.

Native of Mieza.

21. Pithon, son of Crateas.

Native of Alcomenæ.

22. Leonnatus, son of Antipater.

Native of Egæ.

¹⁰⁰ Nearchus was a native of Crete, but a citizen of Amphipolis.

MACEDONIANS.

MACEDONIANS.

23. Pantauchus, son of Nicolaus.
Native of Aloris.

24. Mylles, son of Zoilus.
Native of Beræa.

Thus far the list consists of Macedonians.

25. Medius, son of Oxythemis.
Native of Larissa, in Thessaly.

26. Eumenes, son of Hieronymus.
Native of Cardia.

27. Critobulus, son of Plato.
Native of Cos.

28. Thoas, son of Menodorus.

29. Mæandrus, — Mandrogenes.
Natives of Magnesia.

30. Andron, son of Cabelas.
Native of Teios.

31. Nicocles, son of Pasistrates.
Native of Soli, in Cyprus.

32. Nithadon¹⁰¹, son of Pnytagoras.
Native of Salamis, in Cyprus.

33. Magoas¹⁰², son of Pharnuches.
A Persian.

Onesicritus of Aftypalæa, Pilot, and Master of Alexander's own ship.

Evagoras, son of Eucleon a Corinthian, Secretary, or Commissary
to the Fleet.

¹⁰¹ Nithaphon Gronov.

does not say in what capacity; I conclude, how-

¹⁰² Bagoas. Gronovius. But why? That eunuch hardly attended the army.

ever, that it is the same Androsthene who went

Strabo mentions an Androsthene of Thasus, p. 766, who sailed with Nearchus, but he

down the gulph of Persia to explore the Ara-
bian coast, Ar. lib. vii. p. 301.

Instead

Instead of this barren list of officers, many of whom certainly did not accompany Nearchus round the coast, and many whose names are never mentioned except upon this occasion, it would have been some satisfaction, if it were possible, to have preserved the list of those who were the real first explorers of the Indian ocean; but out of the whole number here enumerated, the only names which occur afterwards in the narrative are those of Archias and Onesicritus.

If the whole journal of Nearchus is preserved by Arrian, there is some reason to complain of the commander for recording all that contributed to his own glory, and to lament that he did not rescue the fame of his brave followers from oblivion. Hephæstion, Leonnatus, Lyfimachus, Ptolemy, Craterus, Attalus, Peucestas, and probably many others, had evidently only a temporary or honorary command; and the silence of Nearchus in respect to the others throws a degree of uncertainty over the remainder of the catalogue. Neither does it any where clearly appear what number of ships or men accompanied Nearchus to the conclusion of the voyage. If we suppose the ships of war only fit for the service, thirty gallees might possibly contain from two to three thousand¹⁰¹ men; but this estimation of both is uncertain, and in reality too high, considering the little means of support they found on the voyage, and the impossibility of discriminating the fighting men from the mariners.

The mariners were supplied from a number of Phœnicians, Egyptians, Cyprians, Ionians, natives of the Hellespont and Ægean

¹⁰¹ It is possible that I may estimate the number too high, both here and on the voyage. See Kokala. For the whole fleet, including transports, carried no more troops than eight thousand. The mariners I find no proper data to calculate. At other times, indeed, eighteen hundred horse and ten thousand foot are embarked.

islands, who had accompanied the army either in a military or mercantile character; neither is it unreasonable to suppose that at the oar many of the natives were employed, induced by advantage, or compelled by force; for this, as a service which required little more than bodily strength, the Greeks frequently assigned to slaves, or those removed but one degree from slavery.

The fleet had been built or collected on the Indus, and part of it had been brought over land to the Hydaspes. The number of vessels is estimated at two thousand¹⁰⁴ by the historians, including all sorts, from the galley to the tender. The collecting of such a fleet has been accounted for already, and the possibility of conveying great part of it from one river to the other, will not appear extraordinary to those who are acquainted with a similar practice at the isthmus of Corinth, or consider that Alexander was at the head of an hundred and twenty thousand¹⁰⁵ men, and was possessed of treasures, alliances, dependents, and tributaries, sufficient to command the services of all the native inhabitants of the country, if requisite.

The voyage down the river is described rather as a triumphal procession than a military progress. The size of the vessels, the conveyance of horses¹⁰⁶ a-board, the numbers and splendour of the equipment attracted the natives to be spectators of the pomp. The sound of instruments, the clang of arms, the commands of the officers, the measured song of the modulators¹⁰⁷, the responses¹⁰⁸ of

¹⁰⁴ Eight hundred ships of war and transports.

¹⁰⁵ We must suppose some extraordinary means requisite, as the space between the Indus and Hydaspes is estimated at sixty-eight fathoms, or about one hundred and thirty miles. This distance, indeed, might be diminished by descending the Indus, but we have no data

to direct us how far.

¹⁰⁶ It is not improbable that Alexander had supplied his cavalry with horses from the Penje-ab. They are as good as Irakies, i. e. Persian. Ayeen Akbari.

¹⁰⁷ Καὶ ἀνταῖ.

¹⁰⁸ So Gronovius renders βῶν.

the mariners, the dashing of the oars, and these sounds frequently reverberated from overhanging shores, are all scenery presented to our imagination by the historians, and evidently bespeak the language of those who shared with pride in this scene of triumph and magnificence.

Arrian has given us the breadth of the Hydaspes and several other streams which join the Indus, but informs us, he has the authority of Ptolemy for that of the Akesines alone; that river he estimates at fifteen¹⁰⁹ stadia, the Hydaspes¹¹⁰ at twenty. The Indus, he says, was forty at a medium, and fifteen where narrowest; that in its course from the confluence of the Akesines to the Delta of Pattala it was an hundred, and lower towards the sea two hundred. By any value of the stadium this estimate is doubtless too high, and the variety of accounts recorded by Strabo¹¹¹ gives room for much uncertainty upon the subject; the highest, he says, was an hundred stadia, the medium fifty, and the lowest seven. It is evident, therefore, that those who differed as much as seven from an hundred, either did not use the same stadium, or did not measure the river at the same time of the year: but it is remarkable, that if the lowest number is considered as the Olympic stadium¹¹², it corresponds nearly with Mr. Forster's account of the Indus above Attock, where he crossed it, and estimated it at three quarters of a mile English¹¹³. Mr. Forster passed in July when the rains must have commenced in the mountains, though they had not reached the lower country; if, therefore, we allow the river to have received some accession to its volume, we have a very extraordinary correspondence between an ancient and a modern account. It would be well if we could reduce the larger numbers of Arrian with as

¹⁰⁹ P. 222.

¹¹⁰ P. 239.

¹¹¹ Lib. xv. p. 700.

¹¹² Eight to a mile Roman.

¹¹³ Rennell, p. 109.

much facility ; but even Mr. d'Anville's stadium of fifty-one toises, which gives somewhat more than sixteen to a mile English, must here fail us ; for fifteen stadia would make the Akesines near a mile broad ; twenty would give a mile and quarter to the Hydaspes ; forty would supply two miles and a half to the Indus above the confluence ; an hundred produces six miles and a quarter for the breadth between the confluence and Pattala ; and two hundred, twelve miles and an half for its final course. Shall we impute this enormity to the amplification of the Macedonians, or to the overflowing of the river ? In support of the latter, we have another extravagance of Onesicritus recorded by Strabo, who says, the Indus rises forty feet, twenty to its banks and twenty above them. but, unfortunately for this assertion, the fleet left Nicæa in October, when the swelling must have been on the decrease, and reached Pattala in July, before the next year's swelling could be very evident in the lower part of the river. According to Tieffenthaler and the Ayeen Akbari, the Indus between Moultan and Tatta runs in a stream comparatively narrow, but very deep, and Hamilton¹¹⁴ asserts, that the channel at Tatta is not more than a mile broad. Arrian's account must consequently be abandoned, unless we make a large allowance for the flood, and his language seems to justify this at the time when he mentions the hundred stadia ; for he adds, " this is the breadth when it spreads¹¹⁵ its waters most." Much

¹¹⁴ It is very possible that the channel from Laribundar to Tatta is less at present than formerly, for the mouths of the Indus all tend to the accumulation of obstructions. Hamilton's account is probably just.

¹¹⁵ καὶ ὑπὲρ τὸν ἑκατὸν τυχὸν ἵνα περιληψάμεθα μᾶλλον.

Perhaps above one hundred stadia where it spreads the widest.

It is reasonable to conclude, that all the vary-

ing accounts of the breadth of the river, which, as Strabo observes, fluctuate between seven and an hundred stadia, owe their disagreement to the different views of the stream, either in its lowest or its highest state. See Arrian, lib. v. p. 200. Ctesias (if Ctesias is any authority) says, that the Indus where narrowest is forty stadia in breadth, and where widest an hundred, but that in general, a medium between these may be assigned.

reason

reason as there is to commend Arrian's accuracy in general, it must be allowed that he copied in this instance from those who delighted in exaggeration, or chose to raise ideas of magnificence by describing not what the voyagers saw, but what at another time of the year they might have seen.

The most moderate breadth of the Hydaspes is found where we should least expect it, in Q. Curtius, who says that it is four stadia, or half a mile, and if we allow, with Mr. Forster, three quarters of a mile to the Indus above Attock, at a season when it was not yet much swelled, there is a reasonable proportion in giving half a mile to the Hydaspes¹¹⁶ at a season when the swelling may be supposed not entirely past.

On this river, at Nicæa, Alexander embarked, carrying on board the hypaspists, Agrians, archers, and the royal troop¹¹⁷ of horse. Craterus¹¹⁸ marched with another body on the right, or western side of the river, while Hephæstion commanded a third on the eastern bank. A fourth under the direction of Philip, satrap of the country on the west of the Indus, followed at three days distance in the rear. The troops commanded by Hephæstion were by far more numerous than the rest; and he had likewise the charge of two hundred elephants, with orders to join Craterus and reduce the territory of Sopithes¹¹⁹, which seems to occupy the angle between the

¹¹⁶ It is remarkable that Curtius mentions also this river—profundo alveo—stagnantibus aquis—occultis saxis—sine vado—in medio amne insulæ crebræ—una insula amplior cæteris. All accordant circumstances, and the last agreeing with Arrian, though omitted by Diodorus. Q. Curtius, vol. ii. 653.

¹¹⁷ Ἀγρία ἵππων, used not exactly by Arrian. It sometimes means all the companions, ἑταῖροι, sometimes ἰδοὶ βασιλικῆς, the royal troop.

¹¹⁸ See the note of Gronovius in loco, upon the division of forces, p. 333.

¹¹⁹ Strabo and Curtius make Sopithes and the Kathzi the same. The site of the Kathzi is known. They were between the Hydraotes and Hyphasis to the southward of Lahore. Arrian makes them different; but if Sopithes was in the angle between the Hydraotes and the Hyphasis, Hephæstion must have passed two rivers to reach them.

junction of the Hyphasis and the Akesines. Having distributed the land forces in this manner, Alexander fell down the river for three days to a station, where he halted two more for the troops to join, and then proceeding again for five ¹²⁰ days, he reached the confluence of the Hydaspes and Akesines ¹²¹. The fleet is described as disposed into different divisions, with orders to observe a due distance, that no confusion might arise; and the progress by water was regulated to accommodate the motions of the army. With this object in view, we can hardly cast an eye over the map without adverting to the coincidence of these circumstances with the local geography. The distance from the lower point of Jamad to the confluence is from sixty to seventy miles ¹²², and with three armies moving in separate divisions, encumbered with plunder, and obliged to make roads or find them, corresponding with the sinuosity of the river, eight or ten miles of a right line is fully equivalent to the road distance of each day's march. Pliny says, the fleet passed down the river at the rate of six hundred stadia a-day. Q. Curtius ¹²³ mentions expressly in this part of the passage, that the rate was only forty. Freinshem, in order to reconcile so glaring a contradiction, supposes four hundred ¹²⁴; but if seventy-five or fifty miles is too much, and five is too little, some other remedy must be sought. It is true, as Mr. Rennell observes of the Ganges, that a passage of fifty ¹²⁵ or sixty ¹²⁶ miles a-day is easily performed when the river is swollen; but this

¹²⁰ Major Rennell supposes only five days from Nicæa to the junction.

¹²¹ Arrian from Megasthenes says, at Cambistholi or Atrobæ. Which of the two is right seems hard to discover. See p. 317.

¹²² Rennell's first map, 75; second map, 70. De la Rochette, 57.

¹²³ Vol. ii. p. 691.

¹²⁴ By reading *quadringenti* for *quadraginta*. See Curt. in loco.

¹²⁵ Major Rennell, from his Latin Itinerary, supposes twenty miles a day's passage for a boat on the Indus.

¹²⁶ Rennell supposes thirty-eight miles a-day down the Indus, p. 290, second Memoir.

fleet was to accommodate the army, and no precipitation of this sort can be allowed. Forty stadia, or five miles, continued for eight days, gives indeed only forty miles, but the deficiency is more tolerable than the excess, and if it might be permitted to invert the numerals of Q. Curtius, and read LX. instead of XL.¹²⁷, the repetition of sixty stadia for eight days gives sixty miles, a distance not greatly differing from Rennell's corrected map, consistent with probability, and correspondent to the ordinary progress¹²⁸ of an army in similar circumstances.

The Hydaspes and Akesines at their junction are both forced into a channel too narrow for their united streams; the rapid eddies and turbulence which arise necessarily from such a cause afford ample scope for the tumid eloquence of Q. Curtius. The more moderate language of Arrian will, at the same time it verifies a fact, give greater pleasure to the reader who prefers truth to embellishment.

Where these two rivers meet, says Arrian, one channel very narrow receives the waters of both. The stream becomes violent from confinement, and whirls in eddies terrible to behold. The

¹²⁷ This is a conjecture not authorized by the text of Curtius, as given either by Freinshem or Snakenborck, for both read quadraginta at full length. Whether the manuscripts they followed have the numerals XL. is not expressed; but those who are conversant in Greek or Latin numerals will allow some latitude for correction.

¹²⁸ The march of Timour from Jamad to the confluence in the very track that the detachment under Hephæstion should have marched, is thus described by Cheref-eddin, tom. iii. p. 52. Translation of Petis de la Croix.

Après avoir achevé heureusement l'affaire de Chehabeddin, l'on marche cinq ou six jours,

au bord du fleuve Jamad (Hydaspes), et . . . on alla camper sur le bord de la rivière de Genavé (Akesines), à une forteresse, vis à vis de laquelle se fait le confluent de la rivière de Jamad avec celle de Genavé, i. e. the Hydaspes with the Akesines.

Five or six days march of a Tartar army, with an object in view, is fully equal to the eight days allotted to the Macedonians, whose army was moving in three divisions, and one of these under Hephæstion detached on an expedition.

Lord Cornwallis, in his march from Bangalore to Seringapatam, moved at the rate of nearly nine or ten miles a-day. See Major Dirom's map.

roar and tumult of the water is prodigious, and heard long before you reach the spot. When Alexander approached the confluence, neither he, nor those on board his fleet, were uninformed of these particulars; yet, while they were still at some distance, upon hearing the noise and dashing of the waters, the rowers rested on their oars, the modulators were silent with astonishment; but as the stream carried them nearer, the commanders recalled both to their duty, and directed them to exert their utmost strength, that the vessels might not be caught in the eddies, but pushed through by dint of force. It turned out, however, that the transports from their built, by yielding to the eddy, escaped with little injury, except the alarm excited in those on board; but the gallies, which from their length and sharpness were less adapted to encounter a danger of this sort, suffered greatly, and some, from having two banks of oars and the difficulty of managing those which were nearly on a level with the water, were exposed to the most imminent danger¹²⁹. Alexander's vessel, however, escaped to a projecting point on the right hand shore, which covered him from the violence of the stream; but he saw two of his vessels sink, and with difficulty saved such of their crews as were able to swim. Many more of the gallies were damaged, which caused a delay here of some days in order to refit them; and while the repair of these was going on, Hephæstion, Craterus, and Philip, joined with their respective forces.

Alexander now ordered the corps of Polysperchon¹³⁰, the mounted archers, and the division of Philip with the elephants, to be con-

¹²⁹ Les vagues qui se forment en ce lieu la font paroître une mer agitée. Cheref-eddin, vol. iii. p. 52.

¹³⁰ Τὴν Πολυσπέρχοντος τάξιν; it was a part of the phalanx.

veyed over the Hydaspes, and proceed under the command of Craterus, while he landed himself and ravaged the neighbouring territory, to prevent succours being sent to the Malli. He returned again before the fleet moved, and then ordering Nearchus to fall down the river for three days, he once more formed his army into three divisions, directing Hephæstion to be five days in advance, Ptolemy to follow three days march in his rear, and both them and Craterus to join the fleet again at the confluence of the Akesines and Hydraotes, while with a fourth division he entered the country of the Malli himself. It was in this expedition, attended with a variety of circumstances not connected with our present subject, that he was himself wounded in storming an inconsiderable fortress of the Malli. The territory of this tribe naturally suggests an idea that it may be the same as the celebrated province, or soobah, which takes its name from Moultan, a city well known for its situation and commerce in Europe as well as India.

MOULTAN.

Longitude		Latitude	
from Greenwich by Rennell,	70 40	by Ptolemy,	31 15
add from Ferro,	17 40	by Rennell	29 50
	88 20	by the Turkish	} 29 30
		geographer,	
from Ferro by Ptolemy,	127 0	Etval's,	29 40 ¹²¹
Ptolemy corrected by	} 90 4		
Goffelin,			

¹²¹ See Otter, tom. i. 407.

According

According to the rivers of Ptolemy, Caspira on the Rhuadis ought to be Moulton upon the Ravee; but if it is so, his latitude is very erroneous, for he places it north of Bucephala, whereas it is near a degree to the south ¹³². The foregoing estimation is consequently liable to all the objections connected with this error.

The fortress, however, where Alexander was wounded was not the capital, for it is as certainly on the north of the Hydraotes, as Moulton is on the south. Major Rennell ¹³³ has noticed this with his usual accuracy, and the testimony of Arrian is direct; for he says that Alexander, after having passed the Hydraotes, returned and crossed it again after the flying enemy, who threw themselves finally into the fortress where this transaction took place. It is remarkable that the boundary given to the province of Moulton by the Ayeen Akbari should correspond with the limits assigned to the Malli by Arrian; for when Abu'l Fazil ¹³⁴ says the Pergunnah of Shoor ¹³⁵ joins the boundary of Moulton on the north, he evidently shews that this soobah extends to the north of the Ravee or Hydraotes, and consequently comprehends the spot allotted for the situation of this fort among the Malli.

While Alexander was engaged in this expedition, the fleet had reached the confluence of the Akesines and Hydraotes; and hither, as soon as his wound permitted him to be removed, he was conveyed in a galley down the stream of the latter ¹³⁶. The transport of

¹³² See Ptol. p. 171, and Mercator's Map Asia, tab. x.

¹³³ Second Memoir, p. 97, Major Rennell places this nameless fort ten miles from the conflux of the Hydraotes and Akesines, below Tolomba.

¹³⁴ Vol. ii. p. 136.

¹³⁵ Shoor lies upon the Chen-ab or Ake-

sines, near the junction of that river with the Chelum (Hydaspes).

See in confirmation, Ayeen Akbari, vol. ii. p. 100.

¹³⁶ Alexander did not land at the actual junction of the rivers, but at the camp of Hephaestion, on the Hydraotes, a small distance higher up. See p. 252. Ar.

joy with which his troops received him, was some compensation for the dangers he had encountered; and so little did the monarch himself seem to be ashamed of the temerity with which he had exposed his person, that he is said to have taken a Bœotian soldier into his favour, who, in his broad dialect, bluntly applied to him the sentiment of a tragic poet:

“He that would do great deeds must suffer greatly.”

Here he was joined by the other divisions of the army, and while he was under cure of his wound he received the submission of the Malli, now humbled by reiterated defeats; and a deputation from the Oxydracæ, offering to become tributaries, and to send him a supply of men.

The Oxydracæ correspond both in name and situation with the district still called Outche, which is comprehended in the soobah of Moultan, and occupies the angle formed by the junction of the Chen-ab, or Akesines¹³⁷, with the Indus. It is somewhat singular that Arrian should mention these people as cantoned into departments, and their magistrates¹³⁸ as presiding in each separate canton, while the moderns distinguish them to this day by the appellation of the Seven¹³⁹ Towns of Outche¹⁴⁰. These local circumstances continuing similar through so many ages, afford no less pleasure to the inquirer than confirmation to the veracity of the ancient historians.

¹³⁷ Ayeen Akbari, vol. ii. p. 136. de la Rochette's map.

¹³⁸ ἡγούμενοι τῶν πόλεων καὶ οἱ νομάρχαι.

¹⁴⁰ Perhaps the orthography is, Owj. or

¹³⁹ See Tieffenthaler, vol. i. p. 118, and Oudj. See Ayeen Akb. vol. ii. p. 100.

This tribe must have been in a flourishing condition, for they furnished Alexander with a thousand men and five hundred¹⁴¹ chariots; and their territory, with that of the Malli, was added to the satrapy of Philip. During the continuance of the army at this place an additional number of vessels had been built, and seventeen hundred horse were again embarked, with ten thousand foot, and a body of light infantry, and the whole ordered to fall down to the confluence of the Akesines with the Indus. It is here that Arrian mentions the junction of the Hyphasis with the Akesines, before that river falls into the Indus. But still he does not mark with his usual attention where the actual junction takes place, neither does he notice the arrival of the fleet at it, as at the confluences which precede and follow. This omission gives us room to doubt of the fact, and though de la Rochette has followed Arrian and Tieffenthaler in uniting the Biah and the Setledj with the Chen-ab before that river meets the Indus, there is still great reason to adhere to Major Rennell, who carries those two rivers with one stream into the Indus directly, without bringing them first into the Chen-ab. It occurs here likewise that the Akesines preserves its name after receiving these several rivers, agreeably to what Tieffenthaler observes of the modern Chen-ab.

The city of Moulton, anciently called Mulatran, which gives name to this province, and which is situated to the southward of the Ravee or Hydraotes, is considered as one of the oldest in India;

¹⁴¹ I should rather read *πεντακοντα* fifty, than *πεντακισια* five hundred; but there is no intimation of an error. The number is extravagant.

it has a citadel and a wall of brick four miles ¹⁴² in circumference. The climate is hot in the extreme, the soil a burning sand, and rain is seldom known. A branch or canal from the Ravee, called Monan, approaches within one cuse of the town; the Ravee itself is only two cuse distance, and the Indus twelve or fourteen. The junction of the Ravee and Chen-ab is distant twenty-five ¹⁴³ miles, and that of the Chen-ab and Indus eighty ¹⁴⁴. It is not impossible that a town of the Malli should have occupied this site in the time of Alexander, but certainly not as a capital, or a place of importance; for the Macedonians were more ready to give consequence to the places they subdued, than to detract from them; but local circumstances by no means disallow of its being one of those fortresses ¹⁴⁵ attacked by Alexander upon his first crossing the Hydraotes, and before he recrossed that river, to the place where he was wounded.

From the junction of the Hydraotes with the Akesines the fleet now fell down to another station, at the point where the Akesines with all its tributary waters is united with the Indus, waiting there for the arrival of Perdikkas, who had been employed in subduing the Abastani. The submission of another tribe named Ossidii had been received by a part of the fleet which had been built at Xathra and came down the Indus, while Alexander had been descending the Akesines. Of Xathra and these two tribes nothing occurs to direct our inquiries but the mention of their names; and in regard to Xathra, the obscurity is of consequence; for there is reason to con-

¹⁴² Tieffenthaler, vol. i. p. 115. His miles are always coss; so that we may estimate the city seven or eight miles in circumference.

¹⁴³ De la Rochette.

¹⁴⁴ Sixty-five miles. Rennell.

¹⁴⁵ Perhaps Βραχμαῖωνι τινὰ πόλιν, p. 242, Arrian.

clude,

clude, that these vessels which now came down the Indus were part of the fleet originally built on that river, and left there when Alexander transported the other part over land to the Hydaspes. Arrian mentions this division as consisting of gallees and transports newly built, but it is hardly credible that the whole ¹⁴⁶ fleet had been carried over land, and highly probable that part left behind had been augmented at Xathra. If we had any data to fix the position of Xathra on the Indus, it would afford great satisfaction to prove the length of the line of transportation, but Xathra is named only by Arrian, and does not appear in Ptolemy, Strabo, Diodorus, or Q. Curtius.

At the conflux of the Akesines with the Indus, Alexander fixed the establishment of a new city, of which, though we find no traces in modern accounts, we may naturally consider the situation as highly advantageous. A city fixed here would necessarily partake of all the commerce that passed up the Indus, to be distributed by means of the several sources above, from Candahar and Cabul on the west, to Tchamoo, and perhaps to Thibet, on the east; and being the centre where all these streams unite, must consequently derive equal emoluments from the commerce that passed downwards to the coast. The judicious choice of a site for this Alexandria (for such probably was its name) has been as little noticed by the historians as imitated by the native ¹⁴⁷ powers of India; nothing is found in the

¹⁴⁶ A similar conveyance of vessels over-land appears, lib. vii. p. 300, from Phoenicia to Thapsacus. Three Quadriremes, twelve Triremes, thirty Triaconteri, divided into parts, and brought over-land by a longer transport certainly than from the Indus to the

Hydaspes or Chelum.

¹⁴⁷ Whatever local circumstances have contributed to the situation of Moultan, have united also in preventing the growth of a city at this confluence.

Ayeen Akbari to prove the existence of any place of importance ¹⁴⁸ at this junction, and the silence of travellers and geographers on the subject leaves the whole matter in obscurity.

Alexander remained here some time both for the establishment of the city, and to regulate the administration of the provinces, for at this junction he fixed the limits of Philip's satrapy, and the commencement of a new one for Oxyartes the Bactrian, father of his wife Roxana, which was to extend to Pattala and the coast. Python was joined in the commission with Oxyartes, and Philip was left at this new city with all the Thracians and other troops sufficient for the defence of the province.

S O G D I. B E H K E R.

IV. As we are now to leave the confluences of the respective rivers, which have hitherto served to direct us in the position of cities, tribes, and countries, a scene of difficulties opens which nothing but a desire of elucidating ancient geography would tempt me to explore at greater length than those who have trod the same ground before me. Our materials are scanty; for Arrian and Diodorus have only two short pages, Q. Curtius part of one chapter, and Strabo two or three lines. In all of them there is hardly a characteristic feature to distinguish one place from another; time and

¹⁴⁸ No magnificent idea is requisite to conceive the building of cities in the east. A fort or citadel, with a mud wall to mark the circumference of the Pettah, or town, is all that falls to the share of the founder. The habitations for the natives are raised in a few days or hours; and inhabitants are supplied either by force, or,

if the place is commodious, by inclination. Timour, as well as Alexander, built cities in two, three, or five days. The soldan of Egypt insults Timour, by telling him that the cities of the east are built of mud and ephemeral, ours in Syria, says he, and Egypt, are of stone, and eternal. Cheref-eddin.

distances

distances are equally disregarded by all. Added to this, I feel some repugnance in deserting the guidance of my constant director Major Rennell, by fixing the Sogdi ¹⁴⁹ at Behker, and Musikanus at Sewee; but I do this upon the authority of Strabo's brief account, who affirms that the seat of Musikanus's government was very near ¹⁵⁰ the Pattalene.

Let us first take a view of the country as it exists at present. The Indus rolls down from the confluence of the Chen-ab or Akesines to Tatta, four hundred ¹⁵¹ miles in one channel, with hardly a single point to characterise one part of its course from another, except the island Behker. Behker is the termination of the modern province of Moultan; the general term for the tract below is Scindy; the title it bears in the enumeration of the Mogol provinces is the Soobah of Tatta; but in the time of Akbar this Soobah was added to that of Moultan. The Soobah of Tatta is divided into five circars. I. Tatta, the Pattala of the ancients. II. Hajykan, running parallel to the Indus, and extending north far above Behker. III. Sewistan, between Behker and Tatta. IV. Nussierpoor, extending east from the head of the Delta; and, V. Chucherhaleh, (as well as I can collect,) extending from the eastern mouths of the Indus along the coast towards the bay of Cutch. We have therefore

¹⁴⁹ Though I desert Major Rennell, I have the approbation of d'Anville.

La ville royale des Sogdi, . . . ne peut mieux se rapporter qu' à Bukor, qui a servi de résidence à des rois de cette contrée.

Renfermée dans une île deux villes sur les rives opposées Sukor et Louhri l'accompagnent.

Geog. Anc. vol. ii. p. 343.

But d'Anville himself is mistaken about Sin-

domana, *ibid.* and *Eclaircissements*, p. 36; *Antiq. de l'Inde*, p. 32.

De la Rochette follows d'Anville in placing Musikanus at Sewee.

¹⁵⁰ I believe not *near*, but *next to*.

Πρὸς αὐτὴν δ' ἦδη τῇ Πατταλῇ τῇ τε τῷ Μουσικανῷ λέγουσι, καὶ τὴν Σαβούτου Σινδοναλίαν, καὶ ἔτι τὴν Πορτικανῶν.

¹⁵¹ Three Hundred. De la Rochette.

two principal positions on the river, between the confluence and the Pattalene; Behker in Moulton, and Sewee in Tatta. We have likewise two governments named in ancient history, that of the Sogdi and of Mufikanus¹⁵². I shall consider each more particularly hereafter; but at present these circumstances will afford some reason to conjecture that these circars are natural divisions of the country, and that the reason of this distribution existed as strongly in former times as at the present day; if so, the ancient tribes specified by the historians possibly occupied the same ground as the modern circars.

The nature of the river itself will suggest other reflections, which will tend to throw farther light on the subject. For the Indus, although it resembles the Nile¹⁵³ in forming the centre of a valley and watering a country where no rain falls, differs in some points more essential. The map is crowded with the names of ancient cities and modern villages on the banks of the Nile, while the Indus has only two places of importance, Behker and Sewee, in a course of four hundred miles.

The range of sand¹⁵⁴ hills on the east are the residence of the Alshambety¹⁵⁵, while a chain of rocks on the west commences from the sea, and runs northward nearly parallel with the river till it joins those of Kandahar. All the ridges of Asia afford security to tribes of plunderers; those in the neighbourhood of Kandahar are the seat of the Aghwans, the conquerors of Persia and the desolators of India; and this range from the sea produces the Belootches, a tribe no

¹⁵² Oxykanus was not on the Indus.

¹⁵³ Major Rennell, Postscript.

¹⁵⁴ Ayeen Akbari, vol. ii. p. 145. Tief- fenthaler.

¹⁵⁵ Called Jams at Tatta, when Hamilton was there. Jams, robbers from the east:

Tief- Balouthes, robbers from the west.

less ferocious than the Aghwans. This range has likewise several branches; one more particularly that reaches the Indus near Sewee, and another which, I have reason to think, forms the boundary between Sewistan and Hajikan; and if there were any guide to direct me, I should as readily assign Hajikan for the feat of the Abastani reduced by Perdikkas, as I can nearly demonstrate that the lower branch in Sewistan was the territory of Oxykanus and Sambus.

From this account of the modern state of the river and the country, let us now return to the ancient historians; the order of transactions, allowing for the variation of the narrative, is the same in all. I. The Sogdi of Arrian are the Sabracæ of Q. Curtius, the Sambestæ and Sodræ of Diodorus. We need not insist on the diversity of names, for it matters little; but the transactions which occurred, the voluntary surrender of the place, and the establishment of docks and arsenals, are all similar and accordant; and though Diodorus would make the Sambestæ and Sodræ distinct tribes, his transactions are too clear to leave a doubt. II. The Musikanus of Arrian is the same both in name and order as in Q. Curtius, Diodorus, and Strabo. III. The Oxykanus of Arrian answers to the Præsti of Q. Curtius, the Portikanus of Diodorus and Strabo. IV. And finally, the Sambus of Arrian has the same appellation in Diodorus, and is the Sabus of Q. Curtius, the Sabutas of Strabo. A situation is now to be found for these four successively; and if a reasonable degree of probability can be assigned for placing the three first, allowances must be made for the scantiness of materials, if it is impossible to arrive at demonstration.

After viewing this question in a variety of lights, I have persuaded myself that the Sogdi were at Behker, Musikanus at Sewee,
Oxykanus

Oxykanus on the west of Sewee at the foot of the mountains, and Sambus on that range of mountains called Lukhy which extends from the great western range, and approaches the Indus at Sewee. The proofs or probabilities necessary to produce the same conviction in others shall be adduced as we pursue the course of the fleet down the river; but I cannot avoid noticing, that by the most cursory view of the map, a fort and dock-yard at the confluence of the Akesines, the same at Behker, with a garrison at Sewee, and other citadels and docks at the head, and two lower points of the Delta, present a line of frontier exactly correspondent to local convenience, and the very nature of the country.

At the confluence of the Akesines, Craterus with the elephants and the greater part of the army was transported to the eastern side of the Indus, as the country on that side appeared more convenient for the march of an army; and Alexander dropped down with the fleet to Sogdi. The distance and the time employed are both omitted by Arrian; but if we place the Sogdi¹⁵⁶ at Behker, the distance appears from Major Rennell to be short of an hundred and fifty¹⁵⁷ miles. In the same order follow the Sabracæ of Q. Curtius, and the Sambestæ of Diodorus; both describe this tribe as living under a republican¹⁵⁸ form of government, and defended by an army of sixty thousand foot, six thousand horse, and five hundred chariots; both specify the submission of this people without a battle, and Diodorus adds, that the Massani¹⁵⁹ and Sodraæ were borderers on the river, who submitted at the same time. In the construction of a citadel and docks at this place¹⁶⁰, all the three historians agree.

¹⁵⁶ In a right line by the scale.

¹⁵⁷ Eighty. De la Rochette.

¹⁵⁸ Arrian says expressly, τὸ βασιλικόν.

¹⁵⁹ Massani and Sodraæ are perhaps the modern Pekier and Sekier, in Sekier written

Suckor and Sunkar; these may be the representative of Sogdi and Sodraæ.

¹⁶⁰ Q. Curtius mentions an Alexandria four days lower down; but it must be referred to this place, as he names no nation or scite.

Now though we may allow great scope for the amplification of Curtius and Diodorus, we are still to consider these Sabracæ as a tribe of consequence in the view of the historians, and I ask where is a position to be found for such a tribe in the course of this hundred and fifty miles before we arrive at Behker. Nothing can be more barren of names than the line of the Indus here in Major Rennell, or de la Rochette; and the discordance of those two geographers, being no less than seventy miles, adds still to the confusion and obscurity. Another consideration is, that Behker in the modern division of the province is a circar of Moultañ; and where the Dooabeh ¹⁶¹ circars end, that of Behker begins: it follows, therefore, that Behker would necessarily be the first capital from the junction of the Akesines, and naturally the scite of the Sogdi or Sabracæ, the first tribe Alexander reached after leaving that junction.

BEHKER.

Longitude			Latitude		
by Ptolemy, from Ferro,	118	00	Ptolemy,	-	25 20 0
by Rennell, from Greenwich,	70	00	Rennell,	-	27 33 0
add from Ferro,	-	17 40 0	Oriental. Otter,		34 00
		87 40 0	De la Rochette,		27 27 0
Ptolemy corrected by Goffelin,	84	16 0			

I take the Binagara of Ptolemy for Behker, not only on account of its central situation between Moultañ and Tatta, but its resemblance in point of orthography, for it is possibly Behh-nagar or

¹⁶¹ A space between two rivers. Doo, two; Ab, water.

Behk-nagar,

Behk-nagar, in which form it approaches Behker-nagar; nagar being the usual adjunct to express a fortified place, and Ptolemy has in this neighbourhood, Agri-nagara, Ka-nigara, Nagar-anigramma, &c. &c.

According to the modern division, the circar or Dooabeh of Behker contains twelve mahls¹⁶², or places for collecting the revenue, which amounts to fifty-seven thousand five hundred and seventy-eight pounds sterling¹⁶³, and furnishes four thousand six hundred and ninety horse, and eleven thousand one hundred foot. These circumstances are stated from the modern account, to shew how reasonably it will bear a comparison with the ancient, allowing for much exaggeration, and considering that India appears more populous in early times than since it has been desolated by invasions.

It would have been a fortunate circumstance if any of the historians had mentioned an island here, or in any part of the Indus between the junction of the Akesines and Tatta; but their silence is unanimous. It will appear, however, that we have something more than conjecture to direct us, for Otter names Bekier, Sekier, and Tekier, as three places dependant on Mansura¹⁶⁴; in which, though he is mistaken (for Bekier is Behker the same as Mansura), he is still right in regard to the other two, for Sekier is the Sunker of the Ayeen Akbari, and Tekier is the fort called in that work Alore, the Louheri

¹⁶² The names of the twelve mahls are the same in Tieffenthaler and the Ayeen Akbari. If any one wishes to see what spelling can do to confound, he should consult both. Tieff. vol. i. 117. Ayeen Akb. vol. ii. 103.

¹⁶³ Reckoning the dam forty to a rupee.

¹⁶⁴ Mansura is a city encircled at a distance by a branch of the Mehran (Indus). The city itself stands on the western side of the main channel; for the Mehran in its descent separates into two streams at Calere, a day's journey from Mansura; the main stream passes to Mansura;

Louheri of de la Rochette. Tekier is situated either at the re-union of the river after its separation to form the island, or just below it; and Sekier assumes a place at the point where the river divides. It is in Sekier, written Sunker and Suckhor, that I find the Sogdi of Arrian, the Sodraë of Diodorus, the Sadracæ of Q. Curtius; and as Sunker and Alore are two out of the twelve mahls assigned to Behker by the Ayeen Akbari, this division has given rise to the distinction of them by Diodorus into separate tribes. Some reserve is necessary in asserting that Alore and Tekier are the same, but it seems highly probable, because Tekier is not mentioned by the Ayeen Akbari; concerning Suckhor all testimonies are united. I conclude, therefore, that the Sogdi of Arrian comprehend the whole island and circar of Behker, and that the name is derived from the first place in the circar at which the fleet arrived.

If this should not be deemed conclusive, I beg the reader to suspend his judgment till he receives additional reasons for fixing the seat of Mufikanus; for the position of either to a certainty will give the respective situation of the other; and I must likewise observe, that the erecting of docks on an island is a natural convenience, while there is nothing on the higher part of the river to direct this operation more to one point than another.

Manfura; the inferior turns to the north towards Sarusan, and then winds back again to the west [read *east*], till it joins the main channel once more, about twelve miles below the city. Manfura is a mile both in breadth and length. Nub. Geographer, p. 57.

This description has led Mr. d'Anville into a great error, for the whole is represented on his map. The error arises from his making Behker and Manfura two different places, which the Ayeen Akbari proves to be the

same; but d'Anville places Behker near four degrees higher up the stream, and this Manfura he places below Sihwan. Otter has fallen into the same error. Vol. i. 406, 407.

Major Rennell makes the isle thirty-five miles in length, which does not differ much from Al Edrisi's account. Manfura is doubtless a Mahometan, and not an Indian title, for it expresses *victory* in Arabic. See Melchiz. Thevenot, tom. i. in Abulfedam, p. 19.

From this island of the Sogdi ¹⁶⁵, Craterus was detached into Arachosia and Drangiana; but as we hear of him again at the next station of the fleet, we must suppose that he only conducted a body of troops which was to penetrate into those countries by another route, and which was to connect again with the future march of the main army through Karmania. This design is perfectly consistent with Alexander's scheme of exploring these provinces by marches in various directions; and it is probable that Craterus went no farther with this body than to mark out the line they were to pursue, and then returned to the main army. The reunion of these forces will be noticed in its proper place.

From Sogdi then, the Behker ¹⁶⁶ of the Hindoos, the Mansura of the Mogols or Persians, Alexander hastened down the Indus to reach the city of Musikanus, before he should be prepared for resistance. I have already said, that Strabo is my authority for placing Musikanus lower down the river than Major Rennell; for Strabo says expressly, that his territory was near, or next to, the Pattalene; and a review of Arrian's account, short as it is, convinces me that, after the transactions which took place here are considered, the immediate arrival of the fleet at Pattala confirms the assertion of Strabo.

¹⁶⁵ It is worthy of remark that the Nubian Geographer makes Mansura a centre of communication both east and west, p. 57, et seq.; and such it would naturally be in all ages, unless the city Alexander built at the main junction of the rivers had taken root.

¹⁶⁶ This island of Behker has two dependant places, Tekier and Sekier, so written by Otter, vol. i. 409. Frazer writes Buckar for Behker, Sunkar for Sekier. Treaty Nadir Shah. Khoudabad seems to be Shicarpoor of de la Rochette's sheet map.

MUSIKANUS. SEWEE. SIHWAN.

V. I fix upon Sewee for the residence of Musikanus, because it is the head of the first circar of Tatta towards the north; and conceiving, as I do, that all these circars have their division or boundaries from nature, I am persuaded that the surest ground for fixing any ancient name is to consider the present distribution of the provinces. Sewistan, the name of this circar, comprehends the country on both sides the river; but on the east there is probably little cultivation, as the tract tends toward the desert and the sand hills¹⁶⁷; on the west, there are branches from the mountains extending towards the river inhabited by Belootches, and on one of these branches, or at the foot of it, may be placed the territory of Oxykanus, the Portikanus of Strabo and Diodorus. The termination of these three names suggests an idea that they contain some allusion to the country, or some mutual relation or connection. What will be alleged on this subject I give merely as a conjecture, and I refer it to the Orientalists for further illustration; but I cannot help thinking that I discover the name of the circar in every one of them.

Sewee is written Sevi, Sihouan, Sihwan, and Sehwan. It is not easy to establish the identity of these names to the same place; for though our maps make them the same, the Ayeen Akbari¹⁶⁸ mentions a chain of mountains extending from Sehwan to Seewee, regarding them as different places though in the same circar; and an

¹⁶⁷ Tieffenthaler, vol. i. p. 122.¹⁶⁸ Vol. ii. p. 142.

obscure San¹⁶⁹ marked on the maps is possibly a corruption of Sehwan. Be this as it may, Sihwan is an appellation sufficiently known and acknowledged; and this word, I think, may be discovered in Mu-sihan-us, Ok-sihan-us, Por-sihan-us¹⁷⁰, for the aspirate *h*¹⁷¹ passes into *k* in almost all words derived from Oriental languages. The termination is Greek for sake of inflexion only, and the initial syllable will possibly be found in the Shankreet to convey an idea of the relation in which they stand. If the distinction between Seewee and Sehwan could be established, I should have little difficulty in asserting, that Moo-sihwan¹⁷² was the chief of one, and Ok-sihwan of the other. I am sensible etymology meets with little encouragement in the present age; but I am likewise convinced from much study of my authors, that all the Indian names which occur in them are capable of being traced to native appellations existing at this day among the Hindoos at least, if not the Mogols; and whenever the society in Bengal for Asiatic researches shall direct their inquiry this way, they will discover more than can at present be calculated. I have proved this in regard to the names of the Panje-ab rivers; others have long seen it in the Malli, Oxydracæ, Peukalotis, Guræi; and I am convinced that every name mentioned in the historians of Alexander will be found either

¹⁶⁹ San may be, however, the Cahan which Tieffenthaler places in this circar, p. 122.

¹⁷⁰ It is remarkable that the reading of this name differs in Q. Curtius. Posticanus, Porricanus. I ask for a third reading: Porricanus.

¹⁷¹ Han or Ham, the original title equivalent to *Chief* or *Lord*, passes into Kan, Khan, Cham, and Cawn. Du Halde. I do not object to applying Kan Khan to Mufi-kanus, if it should be proved that the Tartars had entered India at so early a period.

¹⁷² The title of a Hindoo prince who reigned in this circar formerly, and whose government extended from Mekran to Cachimire, was SIHAR. Tieffenthaler, vol. i. p. 122. writes Sihan.

In a situation lower down, near Birun, appears a district named *Mou* or Ebzat by Abu'l-feda. D'Anville *Eclaircissements*, p. 39. Who will translate *Mou*? I state this merely to shew that *Mou* is a native term.

in the history or memory of the Hindoos. I conceive that they exist in the Shanskreet at this hour, though they may be known to Europeans in a different form derived from the Mogols, disfigured by the lapse of time, change of language, or variety of writing. I have the opinion of Major Rennell in confirmation of this idea, and his judgment I esteem decisive.

If we would now follow Alexander in his descent from the Sogdi to the territory of Musikanus, we must apply to modern sources for information. Arrian gives neither time or distance, and mentions nothing of the country through which the Indus rolls; but the maps give us upwards of eighty¹⁷³ miles¹⁷⁴ from Behker to Seewee, and the Ayeen Akbari¹⁷⁵ informs us, that the country is a desert subject in summer to the Semoom, or suffocating wind. The term desert, however, must be qualified; for we are informed that the Indus changes its course, inclining some years to the east¹⁷⁶, and others to the west; and that it is not so absolutely desert, but that there are villages¹⁷⁷ of herdsmen who change their habitation with the stream. This circumstance, recorded by Strabo, proves the attention of the observers, and the fidelity of the historian; for when we find in Major Rennell¹⁷⁸ that he had similar information from an English traveller who verified the fact upon the spot, we obtain a local characteristic fact dependent upon the constant operation of nature, which fiction could not invent, and scepticism cannot doubt.

Musikanus had sent no offers of submission to Alexander, but surprised by his sudden approach, and not prepared for defence, he

¹⁷³ Seventy-five. De la Rochette.

¹⁷⁴ In a right line by the scale.

¹⁷⁵ Vol. ii. p. 143.

¹⁷⁶ North and south. Ayeen Akbari. The same thing occurs at Behker; which favours

the inclination given to the Indus by Major Rennell.

¹⁷⁷ Ayeen Akbari, *ibid.* Tieffenthaler.

¹⁷⁸ See Rennell's Postscript.

advanced to meet the monarch upon his arrival, and surrendered his city, territory, and elephants, at discretion. The readiness of his submission, and the acknowledgment of his offence, procured him a ready pardon; for upon all occasions of this nature, the policy and generosity of the conqueror were in unison. He found the territory one of the richest¹⁷⁹ in this part of India, and the city so commodiously situated, that he determined to erect a citadel here, and leave a sufficient garrison for its support.

Even in the comparative wealth of this place I find reason to think Mufikanus must be fixed at Seewee rather than Behker, for the comparative wealth of the two cities continues still the same. According to the Ayeen Akbari, the revenue of Behker is only two hundred and thirty-two pounds¹⁸⁰, while that of Seewee¹⁸¹ is five thousand two hundred and eighteen.

The erection of the citadel was entrusted to Craterus, whom we must consequently suppose to have returned from the detachment that marched into Arachosia, and Alexander continued on the spot till it was completed. As soon as a proper garrison was appointed, an expedition was undertaken against Oxykanus commanded by the king himself; his forces consisted of the archers, Agrians, and the horse he had on board. If Arrian or any of the historians had told us on which side of the river the army moved to the east or west, higher up or lower down, we should have some ground to stand on; but we have now one circumstance only, that he was chief¹⁸² of a district

¹⁷⁹ *Εὐδαίμων* *στράτην*. Flourishing is perhaps a more proper term.

¹⁸⁰ At forty dams to the rupee.

¹⁸¹ Havelly is added to Sewee in this account. Ayeen Akbari, vol. ii. p. 105. Jumma.

¹⁸² *Νομάρχης τῆς ταύτης γῆς*, chief of a district in the country here, literally. I cannot conceive a more accurate expression for the chief of a circar, in reference to a soobah; or for the chief of a mahl, in reference to a circar.

in the same country, and are left to our own conjectures for the rest. My conjecture is directed by the mention of Sambus next, as a satrap appointed by Alexander himself over the Indians of the mountains; for the mountains mentioned here correspond exactly with the range called Lukhy¹⁸³ in the Ayeen Akbari. They are a branch of that great chain which extends from the sea to Kandahar, a branch of which reaches nearly to the Indus at Seewee, and affords a residence for a horde of Belootches called Kulmany. On these mountains I have no hesitation to place Sambus; and if in the little light we have to direct us we obtain one position, there is no reasonable objection to fixing the other in correspondence to it. By the motion of the army immediately out of the territory of Oxykanus into that of Sambus on the mountains, it should appear that Oxykanus was on the plain at the foot of that range; and I contend that this plain and these mountains must be on the west of the Indus, because the desert and the sandy hills are on the east; and there is no authority, either ancient or modern, to shew that the range on the east ever approaches the river at any one point.

But let us return to the course of the expedition. Alexander marched against Oxykanus because he had received no embassy or acknowledgment from him; he took two of his largest cities by assault, and in one of them Oxykanus himself; the plunder was abandoned to the soldiers, and the elephants only reserved for the public service. Several other cities surrendered without resistance; for by this time, says Arrian, the spirit of all the Indians was completely¹⁸⁴ subdued. Q. Curtius relates these circumstances with some shade of difference; Oxykanus, he says, was killed, and the people he

¹⁸³ Lakhi. Tieffenthaler.¹⁸⁴ Ἐδεδούλωτο τῇ γυνάμει.

calls Præsti. I desire to make but one more observation. Oxykanus was not on the river; for if he had been, Alexander need not have landed to march against him; he was near Sambus, and Sambus was satrap of the mountains. The conclusion is, therefore, that he was on the west of the Indus, and highly probable that his territory was at the foot of that range called Lukhy, consequently that Musikanus and Oxykanus were both chiefs in the circle of Sehwan.

Sambus, the next object of Alexander's pursuit, has a variety of names, which prove only the doubts of historians, and obscurity of the transactions; for this chief is the Sabutas¹⁸⁵ of Strabo, the Sabbas of Plutarch, the Ambigarus of Justin, the Ambiras of Orosius, the Sabus or Samus of Q. Curtius. This recital is preserved in order to excite the attention of the Orientalists; for the idea of locality is assuredly attached to one or other of these appellations, if the true etymology can be obtained.

Sambus is represented as a satrap, or chief, of a tribe of mountaineers in the neighbourhood of Musikanus, and in hostility with that prince, as all the inhabitants of mountains constantly are with their neighbours on the plain. He had made his submission to Alexander, and received from him a fresh appointment to his satrapy¹⁸⁶; but upon receiving intelligence that Musikanus had made his peace with the conqueror, he had abandoned his country and fled. For this flight no reason is assigned; but it is natural to suppose, that in the reconciliation of his enemy with Alexander he

¹⁸⁵ See Snakenbrock's Notes on Q. Curtius, lib. ix. c. 8.

¹⁸⁶ We ought to consider Sambus as a na-

tive chief. The title of Satrap and the name of Satrapy afford a proof of his being considered as a subject of the Persian monarchy.

foresaw sufficient reason¹⁸⁷ to distrust both; and as conquerors allow none of their tributaries to be injured by any but themselves, Sambus might reasonably imagine, that either his future incursions would be prohibited, or his former ravages must be accounted for; in either case it was his interest to retire; and if he had submitted to Alexander before the reduction of Mufikanus, it is probable that a participation in the plunder of that prince's province had been a principal inducement to effect his submission. When or where this transaction took place does not appear, but if we place it at Sogdi, the delay of Mufikanus in making application for terms, is a sufficient motive for the conduct of his rival. Invasion is too often fortunate in finding the jealousy of the natives favourable to the schemes of the invader, and the petty interests of opposite parties co-operating to their mutual destruction.

If Sambus was at the head of the tribe, I suppose, his submission was of importance; for the Belootches who possess the range of mountains called Luhky styled Kulmanies, are said by the Ayeen Akbari¹⁸⁸ to consist of twenty thousand families, and able to bring ten thousand horse into the field. Their country, though covered with hard rock, black and barren, must be interspersed with fertile vallies; for besides the horses raised for their own service and for foreign sale, camels also are produced here in great abundance, sufficient, not only for the supply of Scindi, but of the interior provinces. From this account of a single tribe, we

¹⁸⁷ See a similar conduct of the second Porus upon the reconciliation of the first Porus with Alexander. Porus on the Hydraotes had been an enemy to the other on the Hydaspes, and had sent deputies to the camp as the army was advancing. After the victory, and the admission of the conquered into favour, this second Porus fled upon the approach of the conqueror to his own territory. Lib. v. p. 223.

¹⁸⁸ Vol. ii. p. 142.

cannot be surprised at finding the general influence of the Belootches extending far to the westward at present, or even to Cape Jask, according to Niebhur¹⁸⁹; neither can we think lightly of the Arabitæ who inhabited the same tract in the age of Alexander, and had the same means of making themselves either feared or respected. Q. Curtius¹⁹⁰, from Clitarchus, states the number of natives who perished by the Macedonian invasion at eighty thousand, besides prisoners; an exaggeration doubtless, but still indicating the relative magnitude of the tribe; and that it was more numerous in the time of Alexander we may conclude; for if the plain country was more rich and populous, the number of banditti maintained out of its spoils would be larger in proportion.

In the Sindimana¹⁹¹ of Arrian, the capital of Sambus, I find an allusion to Scindi, the most general and common name of the country on both sides the Indus¹⁹²; and though there are strong objections

¹⁸⁹ By Niebhur's account of the Arabs, who have in all ages passed the gulph of Persia towards the east, it would be no difficult matter to form a connection between the Arabs and Arabitæ; but Niebhur does not make the same distinction of Brodia and Bloachee which Porter does, seeming to consider all the wandering tribes in Mekran as Belootches.

¹⁹⁰ The whole account in Q. Curtius is confused as usual. For first Alexander enters the country of Sabus, and then falls four days down the river to attack his capital. This is perhaps an error from want of distinction between Sindonalia and Harmatelia. See Arrian, p. 254. As to the eighty thousand slaughtered, I doubt all ancient numbers, but none more than those of Q. Curtius.

¹⁹¹ The best MSS. read Sindimana, not Sindomana. Gron. Arrian, p. 254.

¹⁹² The Nubian Geographer constantly makes the proper distinction between Scind and India, and between both and China; the Chinese he calls Sin, and describes their commerce on the Indian seas nearly in the same manner as Marco Polo, with whom he is almost contemporary. I take this opportunity of mentioning these distinctions, because I believe the Arabic writers derived the name Sin from the Sinæ of Ptolemy, and applied it to the farthest people east, as he had done. When the Portuguese passed the Cape of Good Hope, the only navigators they would find must have been Arabians, and from them they derived the term Sin, which has produced the word China, now current throughout Europe,

jections to placing any city of importance sufficient to be considered as the head of Scindi in the mountains, it is not assuming too much to suppose that the Belootches might have a city at the foot of them. I speak with great diffidence upon the identical situation of Musikanus, Oxykanus, and Sambus; but I have no doubt about the settlement of them all in Seewistan and the mountains adjacent; and I maintain that Musikanus cannot be at Behker, as there is neither mountain or hill that approaches the river near that island. If M. de la Rochette's ¹⁹³ Map can be depended upon in regard to this circar, his disposition of Lukhy or Lacki exactly corresponds with the topography I wish to adopt.

Sindimana made no resistance, for though Sambus had fled, he had no hostile designs against Alexander. He was probably alarmed for his personal safety on account of the submission of Musikanus; but the gates of the city were open, and the officers of the fugitive chief delivered up his treasures and elephants without hesitation. From hence the army advanced to another fortress called the City of the Bramins, and as Diodorus mentions his Harmatelia with the same attribute, it is doubtless the same. This city is said to have revolted, by which we may understand that it was concluded in the original submission of Sambus, and upon his flight prepared to defend itself. It was taken without difficulty, and the Bramins, who were the advisers of resistance, were put to the sword. While these

rope, a term unknown to the Chinese themselves. Marco Polo, who entered from the north, never obtained this word, but calls China, Mangi, probably from the Mantcheoux Tartars. The Arabians penetrated from the west; and though Ptolemy's knowledge extended not to China, his Sinæ were

the termination of his chart, and these were the Arabic Sin. See the Voyage of two Arabians to China in the twelfth Century, published by Renaudot, and in Harris's Collection.

¹⁹³ See his Sheet Map of India, published by Faden.

transactions

transactions were going on, intelligence was brought that Musikanus had revolted. Python, now satrap of the province, was ordered to proceed against him, while Alexander seized the cities in his territory. These, we may conclude, lay between the country of Sambus and the river, and lower down than the residence of Musikanus; but whether Alexander¹⁹⁴ returned thither, or joined the fleet below, does not evidently appear; he found Musikanus, however, a prisoner in the hands of Python, and executed him with the Bramins, who were the promoters of his revolt.

While Alexander was preparing for the prosecution of his voyage, he dispatched Craterus, at the head of two divisions of the phalanx and a body of archers, with orders to take up on his march such of the companions and other Macedonians who had before been ordered to proceed through Arachosia and Drangiana. The whole of these forces, with the elephants, were to direct their course by an inland route to Karmania, and join the main army again in that province. The primary object of this route appears evidently to be in correspondence with the plan Alexander had laid down for surveying and exploring the extensive provinces of his empire; and a secondary design suggests itself, which is, that he was already acquainted with the sterility of Gadrosia, which he intended to encounter himself, and therefore lessened the hazard of distress in proportion to the diminution of his numbers.

During this interval, Mæris¹⁹⁵, the chief of Pattala and the Pattalene, came up the river, in order to make his submission, and to

¹⁹⁴ Μουσικανός τε αἰχμαλωτὴς ὑπὸ Πύθωνος, implies that Musikanus was brought in. If, therefore, Alexander was now in his city, Musikanus had left it and fled into the country, from whence he was now brought as a prisoner. Alexander

executed him ἐν τῇ αἰχμῇ γῆ, which does not quite imply his city, but his territory.

¹⁹⁵ We have the name of this chief from Curtius; and I preserve all names for the investigation of future inquirers.

surrender himself and his territory to the disposal of the conqueror. His offers were graciously accepted, and he was sent down again to his government with orders to prepare every thing for the accommodation of the army upon its arrival.

The proper dispositions were now made for departure. Hephaestion was ordered to take the command of the main body not embarked, and move downwards on the east¹⁹⁶ side of the river, while Python conducted the Agrians and light-horse on the west¹⁹⁶. The king proceeded with the same troops on board as before. He had advanced only three days, when intelligence was brought that Mæris had left Pattala, and fled into the desert with the greater part of his people. The progress of the fleet was immediately quickened, in order to obviate the difficulties which might arise from this defection; but before it reached Pattala, the city was without inhabitants, and the country without husbandmen.

I cannot however enter upon the Delta, without recalling the attention of the reader to the geographical difficulties we have already encountered; for in the passage down the river I find every circumstance to corroborate the position I have assumed from Strabo, and the reasons which induce me to place the Sogdi at Behker, and Musikanus at Sihwan. The testimony of Strabo¹⁹⁷ is positive, that the territory of Musikanus joins the Pattalene; it is upon this testimony that I first found reason to dissent from Major Rennell, and upon which I build the whole explication, detailed perhaps too much at length for the ordinary patience of readers, but of great consequence to historians and

¹⁹⁶ This is inferred from the commission Python received to collect inhabitants for the cities already fortified; and which can be no other than those Alexander had taken and established lately.

¹⁹⁷ Lib. xv. p. 701. Πρὸς ἀπὸ τῇ Πατταλῇ, ad ipsam Pattalenam.

geographers, and highly conducive to the elucidation of our classical authorities. I must now observe that Major Rennell's map gives an hundred and forty miles, and de la Rochette's an hundred and fifty, by the scale, in a right line from Sihwan to Tatta. This, with the sinuosity of the river, may be estimated at two hundred miles; and if we should now add eighty¹⁹⁸ or ninety miles more to carry back Mufikanus to Behker, I ask what reference can Arrian's three days' voyage have to such a distance?—but there are more than three days;—for he proceeded three days, and after that hurried down to Pattala. I allow this, and I will allow two or three days more for the rapid part of his course; but I must observe, that for the first three days he could not proceed more than fifteen, or at the utmost more than twenty miles a-day, if he kept pace with the forces on shore; and when we have taken sixty miles out of an hundred and fifty or two hundred, we leave a sufficient residue for the conclusion of his course, when he may be supposed to have proceeded with the fleet alone, leaving Hephæstion and Python to follow with the greatest dispatch in their power. All these circumstances considered, there is every reason to conclude that Arrian is in harmony with Strabo; and as both these authors drew from original sources, whenever they agree, little attention is due to Diodorus, Q. Curtius, or Plutarch. Upon this occasion, however, though there is some confusion, there is nothing in any one of those writers contradictory to the deduction here made.

It may be objected, that by placing two chiefs in this province, and a third on the mountains near it, we comprehend too much in proportion to the space allotted; but by the revenue Akbar derived

¹⁹⁸ One hundred or one hundred and twenty, allowing for the course of the river.

from this soobah in general, and from the circar of Seewistan only, there is reason to suppose, that as long as there was any commerce upon the Indus all these circars were rich, and all the parts of them cultivated which were capable of cultivation. There is still greater reason to believe, that in the early ages they were all more populous and more opulent; for a number of small states, such as appear every where during this irruption of the Macedonians, universally indicate ¹⁹⁹ population, commerce, and wealth. In the state of India, at this day, every chief who has a fortress is a khan or sovereign, and perhaps at this very instant there may be more than two such sovereigns in this identical district. It is Seewistan itself that the Ayeen Akbari specifies as having forty thousand vessels on the Indus, and its revenue as amounting to forty-eight thousand five hundred and eighty-three ²⁰⁰ pounds. It is probably not less than two hundred miles in length by an hundred and eighty in breadth, and contains nine mahls or subdivisions; these are fully equivalent to the territories or cities, which two such chiefs as Musikanus and Oxykanus can be supposed to have possessed.

But a weightier charge may be alleged against me, for setting up my opinion in opposition to Major Rennell. No one can bear ampler testimony to the accuracy of that able geographer than myself, for no one has studied his map and his memoirs with more attention; and if I dissent from him in this one instance, I do it with that deference which is due to his abilities, and the superior opportunities he has had of obtaining information.

¹⁹⁹ In the ancient world, Greece, Italy Holland, Switzerland, America.
(before the Romans were masters), Sicily, and ²⁰⁰ At forty dams to the rupee.
Gaul, are instances. In the modern world,

Before we proceed to Pattala, I shall explain another geographical problem, which, though not absolutely connected with the progress of Alexander, pertains immediately to the country where we now are. Mr. d'Anville and Major Rennell both express their surprise at finding a tract called Indo-Scythia²⁰¹, in Dionysius Periegetes, Ptolemy, and the author of the Periplus of the Erythræan Sea. This tract seems in their opinion to extend upwards on the western²⁰² side of the Indus, and its inhabitants are by some means or other to be drawn out of Scythia or Tartary; but I conceive the whole to be an ancient error of the simplest nature. We find in this tract two tribes of Belootches, one called Sethians, and the other²⁰³ Hendians²⁰⁴ or Sindhians, which, though ill defined, seem by their names to be one tribe on the mountains and the other on the river; we find a third tribe of Belootches lower down, and nearly in the parallel of Tatta, called Nomurdies, who can raise three hundred horse and seven thousand foot²⁰⁵. If then we may be allowed to add antiquity to these names, the Nomurdies and Sethians will be metamorphosed in Nomades and Scythians without hesitation; and we shall find the Indo-Scythians of Dionysius and Ptolemy in the Hendo-Sethians of Abu'l Fazil, without taking a flight with Mr. d'Anville to bring Huns out of Tartary, in order to set them down on the banks of the Indus.

²⁰¹ Indo-Scythia belongs to the lower part of Scindy, according to d'Anville. *Anc. Geo.* vol. ii. p. 346. *Eclaircissement*, p. 42.

²⁰² Perhaps d'Anville, by including Minnagara in it, (a constant mistake of his about Mansoura or Behker,) is disposed to extend it on the east side of the Indus.

²⁰³ The river Arabis, at which we shall soon arrive, has the name of Hend in d'Anville and de la Rochette; possibly, therefore, the Hendians and Arabitæ are the same.

²⁰⁴ Ayeen Akbari. *Tieffenthaler*, vol. i. p. 119.

²⁰⁵ Ayeen Akbari, vol. ii. p. 142.

VI. P A T T A L A.

Longitude			Latitude		
	°	' "		°	' "
by Ptolemy, from Ferro,	112	50 0	Ptolemy,	21	0 0
by Rennell, from Greenwich,	67	36 0	Rennell,	24	47 0
add from Ferro, -	17	40 0			
	85	16 0			
Ptolemy corrected by Mr. } Goffelin's method, - }	80	0 0			
Ayeen Akbari, - -	102	30 0	Ayeen Akbari,	24	10 0
Otter, {	Abul-feda, -	92 31 0	De la Rochette,	24	43 0
	Etvals, -	92 30 0			

Rennell's estimation is taken from Braminabad, where probably are the rains of Pattala.

We are now to enter the Pattalene, where fresh difficulties occur, which, if they cannot be conquered, may be greatly diminished by a faithful comparison of our authorities.

Pattala, in the Shanfkreet, signifies the region ²⁰⁶ below, or Hell. If we are disposed to interpret this appellation in a good sense, we may suppose the Hindoos signified by it, the country watered by the Indus in the lower part of its course. But if we prefer the other sense, there will be nothing improper in the application; heat and burning sands, and want of rain, all justify the allusion; and the entrance into this country from Hindostan, through the desert of Behker, or the other desert still more extensive, parched, and dan-

²⁰⁶ Maurice Ind. Ant.

gerous,

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gerous, in the route from Guzerat, suggests ideas of hell with great facility to the mind of an Hindoo.

The Pattalene is a Delta, like the Lower Egypt, but the dimensions of it seem very ill defined. The base of this triangle lies nearly north-east and south-west; and if it were possible to give the extent of it exactly, we should obtain a great desideratum in geography. Ptolemy and the author of the Periplus assert, there are seven mouths to the river, and the modern name of Divillee is said to have the same allusion; but although Alexander navigated the two extreme branches east and west; and though there is reason to believe that the commerce on the Indus passed up and down both these, if not some of the others, in ancient times, I have never yet met with a traveller or voyager who passed up the eastern branch except Alexander himself. The extent between the two outer branches is given by

			Miles Eng.
Arrian, at	-	1800 stadia,	- equivalent by d'Anv. stad. to 113
Pliny ²⁰⁷ ,	-	220 Roman miles,	201
Rennell's first memoir,	-	210 English miles,	210
Rennell's second memoir,	-	150 English miles,	150
D'Anville,	-	30 leagues $1\frac{1}{2}$ degree,	104
Dalrymple ²⁰⁸ , Pritty's chart,	-	108 geog. miles,	125
Dalrymple, by another chart,	-	124 geog. miles,	143
De la Rochette,	-	118 English miles,	118
Rennell's map, by scale,	-	170 English miles,	170
Ptolemy,	-	3 degrees 10 minutes,	215

In the disagreement of these several accounts, none of which, as far as comes within my knowledge, are founded on astronomical

²⁰⁷ By applying d'Anville's solution to Pliny, his measure is nearly the same as Arrian's.

²⁰⁸ Measured from Pandrumme to Laribundar. Allow for Ptolemy's degrees in latitude 24.

observation,

observation, nothing appears nearer approaching to probability than the estimation of Arrian; it is likewise, perhaps, the only one that is built upon measurement; for if the coast is capable of a survey, it is almost to be depended upon as a certainty that it was measured by Alexander's surveyors.

The measurement of the sides is as difficult to obtain as that of the base of this triangle; nor does any thing appear like authority on this head, except what is found in Major Rennell, that it is an hundred and twenty-five miles by the course of the river from Laribundar to Tatta, and Laribundar is from fifteen to eighteen miles distant from the sea; this, with four miles from Tatta to the head of the Delta, makes upwards of an hundred and forty-four miles for the western branch of the Lower Delta, and is reduced to sixty-eight geographical miles by the scale²⁰⁹. The eastern branch by the course of the river is stated in the same author at an hundred and seventy miles. This is the best information attainable on the subject; for, as the authority of other maps is unknown, they are less to be depended on.

But there is another extraordinary source of obscurity which belongs to no other spot upon earth; for as the English charts give Lari-bundar for the extreme point west, and by a peculiar inversion Bundar-Lari for the extreme point east, so does the Ayeen Akbari give Cutch for the country eastward, on the bay of Cutch²¹⁰ or Scindy, and another Cutch for Mekran on the west. Mr. d'Anville looked likewise for the Sangada of Arrian somewhere on the coast, but could find only the Sangarians or Sanganians, a horde of pirates

²⁰⁹ Curtius says, four hundred stadia, and then three days sail added. Lib. ix. p. 9.

²¹⁰ De la Rochette writes it Kartsch.

in the bay of Cutch eastward, whereas Sangada is evidently to the west of the Indus. May not this suggest an idea that Sangada was anciently applicable to both sides of the river, as Cutch is at present; and that the name has survived on the east, while it has perished on the west? In regard to the name of Cutch, Major Rennell is certainly not mistaken, when he conjectures that Cedge^{***} or Gedge may be the native root of Gedrosia, the Cutch or Gedge-Mekran of the moderns.

It has been already observed, that Alexander had conceived a plan of that commerce which was afterwards carried on from Alexandria to the Indian ocean. I think this capable of demonstration by his conduct after his arrival at Pattala, and I shall enumerate some circumstances in confirmation of this assumption.

Alexander, in his passage down the Indus, had evidently marked it as the eastern frontier of his empire. He had built three cities, and fortified two others on this line; and he was now preparing for the establishment of Pattala at the head of the Delta, and planning two other posts at the eastern and western mouths of the river. The forces to be left under Python, who was satrap of this country, were chiefly Asiatic; sufficient, probably, for the defence of this frontier, if Alexander had lived to give vigour and stability to his empire, and capable of maintaining the posts he had established for the protection and extension of that commerce he had in view.

With these objects before him, he had, immediately upon his arrival at Pattala, dispatched his light troops in pursuit of the fugi-

^{***} Derived, in all probability, from Kiz, Cheref-eddin and the Nubian Geographer. Kij, or Kidge, the capital of Mekran. See

tives who had deserted the city; and most of them, upon promise of safety and protection, returned. His next care was to explore the deserts on both ²¹² sides, to find water and to sink wells. This is one evidence rather of a commercial than military tendency, for such, all who have travelled in the deserts will esteem it, and such was the opinion of Arrian, who adds, that it was with a view to render the country habitable.

The construction of a fortress at Pattala was committed to Hephestion; and as soon as that business was in some degree of forwardness, Alexander prepared to explore the western branch of the river to its mouth. The general course of this navigation is no difficult matter to conceive; but the particulars afford doubts, which, from the deficiency of materials, and the variations in those we have, are not easy to be resolved. If we place Pattala near the head of the Delta, which we must, the site of Braminabad now in ruins, within four miles of Tatta, will sufficiently correspond. This city, before the inroads of the Mahometans and Mogols, is said to have been surrounded with a wall that had fourteen hundred bastions; and the wealth and importance of such a capital, while commerce flourished on the Indus, plainly indicate ²¹³ the judgment of Alexander in choosing it as a position for a fortress. If his departure was from this point, his progress was down the Lari-bundar river, or Darraway; and the mention of two islands, one near the mouth and the other out at sea, will afford reason to suppose that the first is that upon which Lari-bundar ²¹⁴ stands in our best charts. This,

²¹² More probably on the west only.

²¹³ It indicates, likewise, the population of ancient India, as superior to the modern; a point so often insisted on in this work.

²¹⁴ Major Rennell's last map places Lari-bundar on the west of the Darraway, or rather a Pitty branch.

however,

however, is not clear; for Captain Hamilton, who describes Lari-bundar as a village²¹⁵ of an hundred houses with a fort, and who himself conducted²¹⁶ a caravan from hence to Tatta, does not inform us on which side the river it is placed. From the course of his march we should suppose it to be on the western side, as Rennell²¹⁷ has described it; otherwise he must have crossed the river, which is not noticed. There is, however, one circumstance to make us think his route lay within the Delta, for he mentions the tombs²¹⁸ of the ancient kings evidently at Braminabad, four miles from Tatta, as if they lay in his road; if so, Lari-bundar is not on the west of the Indus.

Mr. Dalrymple²¹⁹ is satisfied in regard to the position of Lari-bundar on the eastern bank, but thinks its insular situation dubious; neither would it have been necessary to insist on this point, unless from a desire of fixing one of those islands observed by Alexander in his passage to the sea. He set out from Pattala with all his galleys, several of his half-decked vessels, and his best sailing transports; dispatching Leonnatus at the same time at the head of a thousand horse and eight thousand infantry, with orders to proceed within the Delta²²⁰, and attend the motions of the fleet. It had been found impossible to procure a native pilot, as the inhabitants had fled, and upon the second day a storm arose, which, blowing contrary²²¹ to the stream,

²¹⁵ In 1699.

²¹⁶ Vol. i. p. 114.

²¹⁷ I conclude this from Major Rennell's map, which places Dugham, an intermediate station of Hamilton's, on the west of the Dar-away.

²¹⁸ Anquetil du Perron mentions these tombs as still existing, and testified to him by letter from Mr. Erskin, English Resident at Tatta in 1760.

²¹⁹ Private correspondence, December 22, 1794.

²²⁰ This is a confirmation that the Delta in this part was not intersected with rivers or canals, and countenances the opinion I have formed of Hamilton's march.

²²¹ As this was nearly the month of August, the south-west monsoon was in its full vigour.

endangered the safety of the fleet. Some of the galleys perished, and the remainder was with difficulty saved by running them on shore. During the delay occasioned by this misfortune, and the repair²²² of the vessels, some light troops were sent in pursuit of the natives, and a few were taken who were used as pilots in the prosecution of the voyage. When these difficulties were surmounted, the fleet proceeded; and as it now approached the sea, the stream appeared enlarged to two hundred stadia²²³; an exaggeration which no computation of the stadium, no allowance for the overflowing of the river, can justify. It is true that the season²²⁴ might have swelled the waters nearly to the highest, and the monsoon contributed to the obstruction of their discharge; but that a river, which is not more than a mile or a mile and a half broad, should from either of these causes be spread to the extent of twelve or thirteen miles²²⁵, is not consistent with probability. The numbers in Arrian are possibly erroneous, (for all numbers in Greek historians are to be suspected); but if they are correct, and copied from the journals Arrian followed, we must either make great allowance for the different²²⁶ breadth of the river in that age, or suppose (as is much more probable) that the Macedonians on board were so alarmed at the catastrophe which befel them the following day, that they amplified in proportion to their terror.

²²² Arrian adds, "ἑτέρας δὲ συνεκτίσθησαν, others were constructed. But perhaps we ought to read, αἱ ἑτέρας, the others were repaired, if συνεκτίσθησαν will bear that sense; for time would scarcely allow the building of new ships, and the country affords no timber.

²²³ Arrian.

²²⁴ July or August.

²²⁵ By the lowest stadium.

²²⁶ The Indus, like all the other streams subject to the solstitial swell, accumulates obstructions at its mouth. In the records of modern history, the sands are much increased, and Tavernier speaks of the mouths as hardly navigable; and such is the Rosetta, or grand branch of the Nile at this day.

That

That day produced a violent gale from the sea, and great hazard to the fleet, which had evidently moved with the tide of ebb, and been involved in the turbulence raised by the opposition of the wind to the stream. To avoid this, they took shelter, by the advice of their native pilots, in one of the canals²²⁷ or creeks which had been formed for the convenience of the neighbouring country. As the tide fell, the vessels were left aground; but upon the return of the flood, those only that had settled upright in the mud, or ooze, escaped unhurt, while all that lay inclined upon the harder²²⁸ ground were exposed to the most imminent danger, and several were lost.

The surprise of the Macedonians on this occasion, and their ignorance of the tides, has been ridiculed by Voltaire, who thinks it incredible that Alexander should not know the nature of tides, as he must have seen the Euripus when in Bæotia, and must have known that Aristotle wrote upon the subject. Major Rennell has corrected this petulance, by shewing that the tide in the Indus is the Bore²²⁹, which operates along the whole coast, and which in the neighbouring bay of Cutch, and round the whole peninsula of

²²⁷ Διόρυχα, a nullah.

²²⁸ The gallees (τριεμνέες) were probably, in the nautical phrase, *sharp built*, that is, with deep keels; a vessel of this kind is ill adapted for *taking the ground*, and when she is left upon an hard surface lies down almost on her side; the consequence is, that upon the return of the tide, she fills with water before she floats. I am informed that the circumstance here noticed is exactly similar to what takes place in the mouth of the Seine, between Havre and Rouen, where the tide rises with a rapidity greater than any experienced in our own country, except perhaps in the Severn.

²²⁹ The Bore, with all its attributes, is

described by the author of the *Periplus Maris Erythraei* (page 27, Hudf. Ed.) in the gulph of Cambay, or Guzerat, which he writes Barugaza; and I invert Barugaza into Ba-Guzara, or Guzerat; for Guzerat is only a corruption of the Arabic Gezira, and is a peninsula. In this view I contemplate the Barugaza of the *Periplus*, and the Ba-gasira of Arrian, as the same word; for Arrian applies Ba-gasira to Cape Arraba, which is a peninsula also. The adjunct Ba will be noticed hereafter; and as the Orientals themselves transpose the syllables, writing Gefira or Gerisa, so does the *Periplus* add another transposition, Rugaza for Guzara, or Guzerat.

Guzerat,

Guzerat, is described as one of the most alarming effects which the sea produces.

The damage was repaired as well as the situation of affairs would allow; and two of the transports were sent down to explore an island called Killuta [Killoota], where it was said anchorage and shelter would be found, and occasion might be taken for prosecuting the discovery²³⁰. Upon a favourable report the fleet proceeded to this station; and Alexander, taking with him some of the best sailing vessels, proceeded to a second island which lay clear out of the river, and ascertained the existence of a passage. The distance of this second island from Killuta is estimated at two hundred stadia, or about twelve miles; and if our modern maps or charts were to be depended on, we could find positions for both these islands. One of Mr. Dalrymple's charts gives an island named Lari-bundar (from the town), which would answer to Killuta, and another small islet which might correspond with the second; Mr. de la Rochette's map seems to have followed this as authority; but as Mr. Dalrymple publishes the drawings he receives, without making himself answerable for their accuracy, and as he has himself doubts concerning Lari-bundar, nothing can be determined positively on the subject. From the nature of the river, we may conceive that new accumulations have obscured the ancient face of the coast, new channels may have been formed by art or nature, and old ones obstructed; and if we were to give a preference, it would be to abandon the position of Killuta²³¹ here assumed, and establish upon future ob-

²³⁰ More will be said on the subject of this island when it comes under consideration again upon the departure of Nearchus. tions Deboul, Divil Scindi, here, in latitude 22° 30', which it certainly is not; and Lahuri Larri on the eastern branch, two days

²³¹ Cilluta, Cilluta Scillustis Philucin. Curt. journey distant, which is vague. Vol. i. Loccenius, in loco; but see *infra*. Otter men- sp. 406.

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servation the site of the outer inlet, as the extent of Alexander's progress.

The Western Mouth of the Indus called SAGAPA by Ptolemy:

Longitude			Latitude		
From Ferro	110	20 0	19°	50'	0"
Rennell, from Greenwich	66	22 0	24°	43'	0"
add from Ferro	17	40 0			
	84	2 0			
Ptolemy corrected by Gosselin	78	5 0			

From this point he returned back to Killuta, and sacrificed to the gods; he proceeded the next day a second time to the outer island, and sacrificed there also; after which, he stretched out into the ocean, as he asserts²³² himself, to determine whether the sea were open, or there were land in the neighbourhood; but, as I imagine, says Arrian, not a little instigated by the vanity of having it recorded, that he had navigated the Indian²³³ ocean. At the extent of his course, he sacrificed a third time to Neptune with still greater solemnity, throwing the golden vessels he had used in the ceremony into the sea, and praying for a prosperous issue to the expedition of Nearchus.

The object of this excursion being completed, Alexander returned²³⁴, with the vessels which had accompanied him, up the river again to Pattala, where he found the citadel completed, and Python

²³² Probably in his letters, which were extant in the time of Arrian.

²³³ Τὴν Ἰνδὸν θάλασσαν. In opposition to the Mediterranean.

²³⁴ To Hyala, says Diodorus, a city with a

Spartan government! But where are we to find it? Both Diodorus and Curtius are ignorant of the voyage down the eastern branch. Diod. xviii. p. 241.

returned

returned from his expedition. Hephæstion was left to superintend the construction of a naval arsenal here, with orders to fortify it, and prepare it for the reception of a fleet which was to be established at this station, while Alexander himself should undertake another excursion to the sea by the eastern branch of the river.

These two branches only are mentioned by Arrian, and the reason evidently is, that these were the only two explored by the Macedonians. I have met with no author prior to Ptolemy who mentions the seven²³⁵ mouths; and modern geography, though it preserves the record of the river still having seven issues, affords nothing specific upon the subject. On two of Mr. Dalrymple's charts, double the number of creeks or inlets may be collected, with their names; but whether they are natural or artificial, ancient or modern, seems, from all the information we have at present, impossible to determine.

Major Rennell brings out the eastern channel much farther towards the east in his second map than in his first; the channel itself, or the place at which it issues, is named Pandrimmee or Pandrummee, in his and several of Mr. Dalrymple's charts; and the stream is called Nulla Sunkra. But Nulla, Nalla, Nala, Nallah, is a Persian term, and seems as if it was never applied properly except to an artificial²³⁶ cut. The authority for making this the easternmost branch at present stands high; for we have in Frazer the translation of the actual treaty²³⁷ between Nadir Shah and the Mogol Emperor, in

²³⁵ The author of the Periplus says there are seven mouths, but two only navigable; the others are shallow, or choked by the marshes they pass through.

²³⁶ Nullah or Nallah is a Persian word, derived from the Hebrew נַחַל and נָחַל, a hollow, valley, or course of a torrent—the torrent itself. Lev. xi. 9. Deut. ii. 24. Isaiah, xxx. 28.

xxxv. 6. xxxiv. 9. But there is an authority, Isaiah, xi. 15. where נַחַל יְמִי is applied to the seven streams of the Nile. Bishop Horsely.

²³⁷ Frazer's Nadir Shah, p. 226.

Otter, who reports this treaty nearly in the same manner as Frazer, writes it Nalé Sengueré.

which Nala Sunkra is made the new boundary of the two empires. It is not a little remarkable, that previous to this treaty in 1739 the boundary of Indostan and Persia was nearly the same as in the age of Alexander; for till this took place, the Mogul empire extended to the range of mountains on the west of the Indus, the residence of the Belootches, and in Arrian's journal the river Arbis or Arabis, which springs from that chain and runs parallel with it at no great distance, was the limit of India and of Indian manners ²³⁸.

Nadir Shah had passed the sources of the Indus and the Panje-ab, and he preferred the Attock river as a boundary to any other; he prescribed this, therefore, to the conquered Mahommed, and at the same time carried his claim to the circar of Tatta and its dependencies, including the whole Delta, as bounded by the easternmost branch, or Nala Sunkra, and establishing ²³⁹ Lohry-Bundar (evidently beyond that line) as the extent of the Mogul empire.

There is nothing but the term Nala which hinders me from establishing this as the very channel navigated by Alexander; and though no modern accounts have ever been attainable to ascertain the passage down this branch, yet I have no doubt that while commerce flourished on the Indus this was the immediate course of communication, as trade always flowed to Guzerat and the coast of Malabar naturally, rather than to any port on the west of the Indus. If the present Nala be a genuine stream, there is no difficulty in adopting it; if it is an old channel cleansed, it might assume the

²³⁸ The Oritæ partook of Indian manners, is what our English authorities call Bundar Laree, to distinguish it from Lari-bundar on

²³⁹ Written Seuheri by Otter, vol. i. the western branch, or Daraway. Better p. 409, perhaps for Leuheri. Lohry is knowledge of the language will possibly distinguish Lari-bundar, thus spelt in the treaty; this cover the application of this term to both.

name of Nala; and if it is a new cut, it cannot be of very late date; for the commerce on the Indus is ruined. In any view, it must be nearly parallel with the ancient channel, and at least part of the course pursued by the Macedonians. Alexander himself assumed the office of exploring this passage; and no commander was ever more personally entitled to the honour accruing from the success of his designs, or contributed more by his own exertions to the accomplishment of them: In battle he constantly fought at the head of that body on which the fortune of the day depended; in all expeditions ²⁴⁰ he personally executed that part which presented the greatest difficulties; and in every scheme of magnitude, after procuring the best information, he was the first to try the ground himself, before he committed ²⁴¹ the execution of it to others.

It was in conformity to these principles of conduct that he now determined to explore the eastern branch of the Indus; conquest was at an end, for the barrier of the empire was determined on; and evidently no object was before him, but either the safety of the fleet in the choice of a passage, or that still greater system of commerce which he had meditated, to connect the interests of Europe and India, and of which the success of Nearchus was to be the origin and commencement.

He departed from Pattala apparently with the same escort as before, and fell down the stream till he arrived at a lake or bay, which was of great extent, and received its supplies from other waters in the adjacent tract. But as we know the Indus receives no tributary streams after it passes Behker, we must conclude that these

²⁴⁰ He sent Craterus through the midland provinces, and marched himself through Gaddusia.

²⁴¹ He visited the stagnant pools from the inundation of the Tigris and Euphrates, and planned the barrier at Pallacopa.

waters in the neighbourhood can be no other than different channels, which branch from the main river and intersect the Delta in different directions; thus is Arrian, who mentions but two channels, compelled to bear witness to the existence of more. And would not this be the case with the Macedonians themselves? They navigated only two streams, and therefore described but two; they have nevertheless recorded the circumstances which occurred, and these circumstances prove more to us than to those concerned in the transaction.

This lake²⁴² is evidently no more than a bay into which the eastern channel falls, and must be searched for in vain at the distance of twenty centuries, considering the nature of the river, and the accumulations at its mouth. It is described by Arrian as very extensive, and abounding in all the species of fish which are common to the neighbouring sea. At the head of this bay Leonnatus and the greater part of the forces were put on shore, while Alexander proceeded with the gallies to take a view of the ocean. He observed the passage here more open and convenient than that through the western branch; and though he did not afterwards send the fleet down this channel, we may collect that he intended to use it as the means of communication with the coast of Guzerat and Malabar, by the transactions which took place; for as soon as he had anchored he landed with a body of horse and, proceeded three²⁴³ days march along the coast, making observations on the country, and directing wells to be sunk.

²⁴² Q. Curtius, who knows nothing of the passage down this branch, finds a lake on the other, where those who bathed became leprous, but were cured with oil. Lib ix. p. 9.

²⁴³ Probably fifty or sixty miles.

The general title of this tract is Cutch²⁴⁴, and gives name to a bay on which it lies; the country is a desert inland, and seldom passed but by the caravans which used to travel between Gúzerat and the Indus. Our modern journals still mark the wells which have been sunk to make the desert passable. Parallel to the coast runs a range of mountains called Chigoo; and the strip of land between these and the sea is the residence of the Sangarians²⁴⁵, a race infamous for their piracies in the accounts of all our early voyagers. Along this level Alexander advanced, and the wells he sunk sufficiently indicate the object of his expedition.

If I understand Arrian right, Mr. Rennell²⁴⁶ is mistaken when he supposes Alexander to have advanced westward along the Delta upon his landing in the direction that his fleet was to sail, for the fleet did not put to sea by this channel; and mention is afterwards made of a detachment that appears to have landed on the Delta, with orders to examine the coast, to sink wells²⁴⁷, and then join the main army at Pattala²⁴⁸.

Upon the conclusion of this excursion, Alexander embarked his horse again, and returned to the head of the bay where he had left Leonnatus. Here he directed a station²⁴⁹ to be fixed, with a naval yard and dock, leaving a sufficient garrison for its protection, and provision for four months.

I enter into this detail of minute facts, in order to evince the reality of that foresight and prudence which I have all along attributed to this great commander; his character has been usually esti-

²⁴⁴ Kartsch. De la Rochette.

²⁴⁵ Hamilton had a battle with them.

²⁴⁶ Postscript, p. 294.

²⁴⁷ See Gronovius's Note, p. 259.

²⁴⁸ Τὴν Παραλίαν.

²⁴⁹ Possibly the Xylenopolis of Pliny. Lib. vi. p. 23.

mated by the victories he gained and the ravages he spread ; but the regulation of his empire, the security of his frontier, the extent of his commercial views, the survey of his provinces, and the share he took himself in every thing that concerned his government, lie obscured by the splendour of his arms and the extent of his conquests. We are now to attend him back again to Pattala ; and if I could give a satisfactory account of this eastern branch, I should satisfy the curiosity of the most accurate inquirer : but Major Rennell, who says it is an hundred and seventy miles in extent, does not carry the Nulla Sunkra to Tatta, but much higher. Mr. de la Rochette's ²³⁰ map gives it a direction I could adopt, and makes a considerable bay at the mouth of it ; but as I know not the authorities he follows, I am constrained to hesitate while I seek for evidence. The lower part of the Delta is intersected by a variety of channels which it is impossible to specify ; it is without wood, and abounds in camels ; the upper part near Tatta was fertile in the best rice, and other produce of importance, while the country had any commerce ; and cultivation being probably in a higher state at the time the Macedonians visited the country, the support of three garrisons for its protection was neither superfluous or oppressive.

Alexander did not stay long at Pattala after his return ; he had previously determined to penetrate into Gadorfia, and explore the coast, in order to facilitate the success of Nearchus ; and from the circumstances which occurred, we may collect that he moved near a month earlier than the fleet. Strabo mentions that he was ten months in his passage from Nicæa to Pattala ; if, therefore, he had

²³⁰ As does d'Anville *Antiq. Geog.*

set out on the twenty-third of October in the year three hundred and twenty-seven A. C., he came to Pattala in August three hundred and twenty-six; but the dates in the same author prove rather nine months than ten; and the concurrent testimony of other facts favours this estimate rather than the other. We cannot allow much less than a month for the transactions which took place at Pattala, including the navigation of the two streams; if, therefore, he left that place at least a month before Nearchus, as will presently appear, he must have arrived there in the latter²⁵¹ end of July or the beginning of August, and left it early in September.

We shall be under no necessity of attending upon this expedition farther than it is connected with the progress of the fleet; but as there were two opportunities of communication embraced, and a third attempted, we must accompany the army into the country of the Arabitæ and Oritæ; after which, it will be sufficient to sketch the general course of the route into Karmania, where Nearchus joined Alexander again, and reported the account of his success.

VII. I place the departure of the army from Pattala in the beginning of September, at which time Nearchus received his final orders, which directed him to take charge of the fleet, to prepare every thing necessary for the voyage, and to proceed to sea as soon as the season would permit.

Alexander proceeded into the country of the Arabitæ, lying evidently in that range of mountains before described, which com-

²⁵¹ Strabo, Lib. xv. p. 691.

They set out a few days before the setting of the pleiades, and spent the autumn of that year, the winter, spring, and part of the following summer, in their passage down the river; they arrived at Pattala about the rising of the dog-star, completing their navigation

in ten months—but how so?—the pleiades set the 28th of October, and the dog-star rises the 26th of July, which makes nine months as nearly as is requisite. How can we account for *δὲκα μῆνας* here, but by that perpetual error which pervades all the numerals in Greek authors?

mence from the sea and extend parallel with the Indus up to Kandahar. These mountains are still occupied by different tribes of the Belootches, whose habits to this day resemble the manners of the people described by the Macedonians. They dispersed at the approach of a superior force, and collected again from their fastnesses as soon as the enemy was passed.

These Arabitæ are mentioned by Arrian as an independent tribe, like the Belootches of the present day; as in fact all the inhabitants of mountains²³² either in Persia or Hindostan have generally been. Their country seems to lie on one of the branches of the great chain, and extends into the plain as far as the river Arabis, which was the limit of India in the age we are treating of, and either at this river or at the mountains the boundary continued, till Nadir Shah, by his treaty with the Mogul emperor, removed it to the eastern stream of the Indus. Major Rennell's second map defines this country and the ridge which ends at Cape Monze, agreeably to Arrian's account, and, from a variety of corresponding circumstances, there is every reason to subscribe to his opinion.

And here, as I shall have no better opportunity to mention a variety of facts, which will contribute to the perspicuity of the narrative, I shall introduce a general view of the coast, and the peculiarities connected with it. The nature of the two coasts of Malabar and Coromandel is now well known in Europe, as consisting of a tract of low land towards the sea, below a line of mountains which encircle the whole centre of the peninsula; the same circumstance seems to take place again on the bay of Cutch, where the

²³² Those who wish to see a catalogue of the extraordinary one in Mr. Baldwin's journal, robbers inhabiting one part of Asia, *i. e.* Taurus, published with Major Capper's route from Amanus, M. Casius, &c. &c. may find a very Basra to Aleppo.

Chigoo mountains appear running inland, parallel with the sea, till they join the range of sand hills which form the eastern branch of the valley in which the Indus flows; the centre of this valley is occupied by the stream, and at no great distance on the western side another barrier is raised by the chain of black and rocky mountains so often mentioned; one ridge of which terminates not far from the western mouth of the Indus at Cape Monze, the Eirus of the Macedonians. Out of this chain, at no great distance from the sea, a branch shoots off again, running west or north-west parallel with the coast²⁵³, and inclosing the level country of Gadrosia, parched and barren in the extreme. The modern name of this tract is Mekran, or Cutch²⁵⁴ Mekran, and is specified in Commodore Robinson's journal, published by Lieutenant Porter by the name of Bloachee, and Brodia. Bloachee is a corruption of Balotchee, and I imagine the coast is so called as far as the influence of the Belootches²⁵⁵ extends, and, where that ends, Brodia. That this branch sends off shoots towards the sea at particular points seems probable; but that its general course is parallel with the coast, is ascertained by Commodore Robinson's²⁵⁶ journal, and another of the Houghton East Indiaman, 1755, which I owe to the communication of Mr. Dal-

²⁵³ It is nearly evident that a second ridge shoots from this chain, forming the residence of the Oritæ. I could have made use of his eighteen days, if he had not destroyed his own consistency.

Q. Curtius says, that Alexander waited at Pattala for the return of spring; not knowing that the change of the winds causes the difference of seasons. He adds, lib. ix. p. 10. that Alexander made nine days' march into the country of the Arabites, and nine more into Gadrosia; subjoining, almost immediately, five days' march to the river Arabis.

²⁵⁴ Gedje-Mekran; Rennell: from Kiz or Kidge, the capital.

²⁵⁵ The boundary between Bloachee and Brodia is fixed by Lieutenant Porter at Guadel; p. 5.

²⁵⁶ "The land, as in all other parts of the coast [of Bloachee], is extremely low by the sea side, and very high in the country." C. Robinson. Lieutenant Porter, p. 2.

rymple. In all this level country no river²⁵⁷ has a longer course than from the mountains to the sea; in which it resembles the coast of Malabar, where almost all the rivers rise westward²⁵⁸ of the Ghauts. One branch of this range, I imagine, verges towards the sea, not far eastward of Cape Jask, separating Gadorfia from Karmania; but no sooner are we past that promontory than we find the same face of the country return, a level tract along the coast called the Kermesir, or hot country, with a range of mountains inland. This range, Mr. d'Anville says, is never cut by any river, but stretches on uninterrupted till it joins the mountains which encircle Persia and Sufiana. Here the Tigris stops its farther progress, and sends it off with various curvatures till it joins the mountains of Armenia. These general properties attending the whole range of coast almost from the mouths of the Ganges to the Tigris, present one of the boldest features in the geography of the world, and become of more importance, as these mountains connect with that extraordinary chain which extends on the north of Persia across the sources of the Indus, forms the barrier of Hindostan, and penetrates through the extremity of Asia, till it falls into the sea of Amoor, on the north of China.

There is no part of Arrian's history where these general circumstances connect with the transactions of the Macedonians, which is unworthy of the attention of geographers; and, on the particular coast of which we are now to treat, nothing which the most accurate investigation of modern inquirers has not confirmed. He has

²⁵⁷ Mr. de la Rochette marks the Tanka-Banca as rising beyond the mountains; but, as no memoir accompanies his map, I know not on what authority. Otter, however, countenances this opinion.

²⁵⁸ It is not so on the coast of Coromandel, the Nerbudda, Krishna, Ganga, and Caveri, &c. all rise above the Ghauts, and near the western range.

traced the line of these mountains, from Paropamisus to the sea, with as much precision as the Ayeen Akbari; and he has brought the army to that pass over them, which continues to this day the route of intercourse between the Indus²⁵⁹ and Mekran; if intercourse there can be, where the roads are exposed to banditti, and where there is little power or attention in government to protect the interests of commerce.

Arrian does not indeed expressly state, that Alexander passed a line²⁶⁰ of mountains in this march; but it may be collected from what he has said above, that the range in the country of Musikanus, or Sambus, extended to the sea. He advanced with a body of horse and light troops, leaving the remainder to follow under the command of Hephæstion; the natives fled into the desert on his approach; in pursuit of them he passed the Arabis²⁶¹, a narrow stream with little water, and advancing through the desert all night, reached the habitable country in the morning. This was the residence of the Oritæ. Here he left his infantry to follow in due order; and, spreading his

²⁵⁹ See the Nubian Geographer, p. 57, et seq.

²⁶⁰ The existence of this range is indispensible, for the Ayeen Akbari says, "there is another range, one extremity of which is in Kutch, (the coast west of the Indus,) and the other joins to the territory of the Kulmanies, where it is called Karch. It is inhabited by four thousand Belootches." Vol. ii. p. 143.

It has already been shewn that the Kulmanies are on the parallel of Sewistan, and probably occupy the territory of Sambus; this range, therefore, that runs from thence to Kutch, (the coast,) can be no other than the one occupied by the Arabitæ or Oritæ. I am persuaded with Major Rennell, that there are

two of these ranges, one belonging to each; and nothing hinders me from asserting it but the appellation of Karch, which affords a suspicion that Kar has some relation to Har, Haûr, Hor-eitæ, Or-eitæ.

"The land at the back of Crotchy is pretty high, and extends so to C. Monze." Lieutenant Porter, p. 2. I shall shew hereafter that Crotchy is the Crocala of Arrian; and C. Monze, Eirus, or Irus: and I consider this evidence of Porter as full proof of the existence of a chain previous to the river Arabis.

²⁶¹ See *supra*, the Hends of d'Anville and de la Rochette, and the Arabitæ; perhaps the Hendians of the Ayeen Akbari.

cavalry over the country, slew all that resisted, and brought in a great number of prisoners. The army then halted at a small ²⁶² stream for the arrival of their light infantry and the junction of Hephæstion. As soon as they came up, Alexander himself moved to Rhambacia ²⁶³, the principal village of the Oritæ; he found the situation advantageous, and directed Hephæstion to fortify it as a post, while he proceeded again to the confines of Gadrosia. Here the Oritæ who had fled, after being joined by the Gadrosians, had taken post in a pass that was narrow and difficult of access (apparently on the second of those ²⁶⁴ chains already mentioned); and this pass they determined to defend. Upon his approach however they dispersed, and the Oritæ sent offers of submission. He ordered the chiefs to

²⁶² Probably the stream we shall hear of again under the name of Tomerus.

²⁶³ Ram, or Rham, has doubtless a sense in Shanskrēt. There is a Ram Raja in the Mahratta country; another Ram mentioned in Nadir's treaty; and Ram-nagar in the Ayeen Akbari, as lying in the course of the mountains north of Gadrosia. I see no reason why this last may not be Rham-bacia; but I find no Ramnagar in the maps. See Snakenborck Not. ad Curt. lib. ix. p. 10.

²⁶⁴ I have before appealed to [C. Robinson] Lieutenant Porter, for the existence of a range which falls in at C. Monze, or Irus; and I think we have his authority for a second ridge between the Oritæ and Gadrosia, which falls in at Cape Moran, or the rocks of Kingalah. Moran, I have no doubt, is the Malana of Arrian, which he says is the western limit of the Oritæ; and a bluff head-land, mentioned here by Lieutenant Porter, is, I apprehend, the termination of the ridge. Moran is marked by d'Anville with the title

of Malan; and considering how easily *l* passes into *r*, both to the ear and by pronunciation, no doubt remains that the Malana of Arrian, the Malan of d'Anville, and the Moran of Porter, are the same. See Lieutenant Porter, p. 3. I have met with Malan and Mahlan in other journals. Mr. d'Anville, p. 44. Antiq. Geog. quotes Thevenot; and Thevenot mentions Malan, p. 194, Eng. ed. but with such obscurity, (for he did not see it,) that it is not easy to ascertain whether he means to say it is twenty or forty leagues from Scindi.

"Cudjerah appears a low point, but terminates in a bluff, as by its last appearance with C. Moran." Lieutenant Porter, p. 3. "The land from Sommeany, [the mouth of the Arabis,] runs extremely low next the sea, but the back is very craggy, and continues so to Cudjerah." *Id. ibid.* All these testimonies indicate a ridge tending to the sea at Malana; and here, where Arrian places the boundary of the Oritæ, we ought to find it.

collect the fugitives, and send them to their respective habitations, under a promise of safety and protection.

Apollophanes was appointed satrap of the province, and Leonnatus was left with the Agrians, a body of archers, horse and infantry, and the whole of the Greek cavalry in the service. These forces were intended to support the regulation of the province, to superintend the establishment of the city, and to wait the arrival of the fleet on the coast. Alexander ²⁶⁵, upon leaving Pattala, had designed to have proceeded along the coast and attend to this service himself, by digging wells and collecting such supplies as the country afforded; but he had been diverted from this purpose by the flight of the Arabitæ and Oritæ; and as he was now at the entrance into Gadrosia, where he foresaw the difficulties he was to encounter, he was desirous of proceeding with all dispatch, and left the protection of the country and the fleet to Leonnatus. That officer approved himself worthy of the charge; for scarce had Alexander left the province before the Oritæ, with the neighbouring tribes, collected again into a body ²⁶⁶ and attacked the forces left for its defence. A victory over such an enemy as this was perhaps no great achievement; but as Leonnatus slew six thousand natives, saved the province, and relieved the fleet, his services were rewarded with a crown of gold when he afterwards joined the main army in Sufiana ²⁶⁷. Neither ought we to undervalue the merit of this service; for this part of the coast, before we enter Gadrosia, appears neither deficient of inhabitants or the means of supporting

²⁶⁵ See Arrian, p. 260.

²⁶⁶ Eight thousand foot, five hundred horse.
Q. Curt. lib. ix. p. 10. The reverse is more

credible, for these tribes are all mounted.

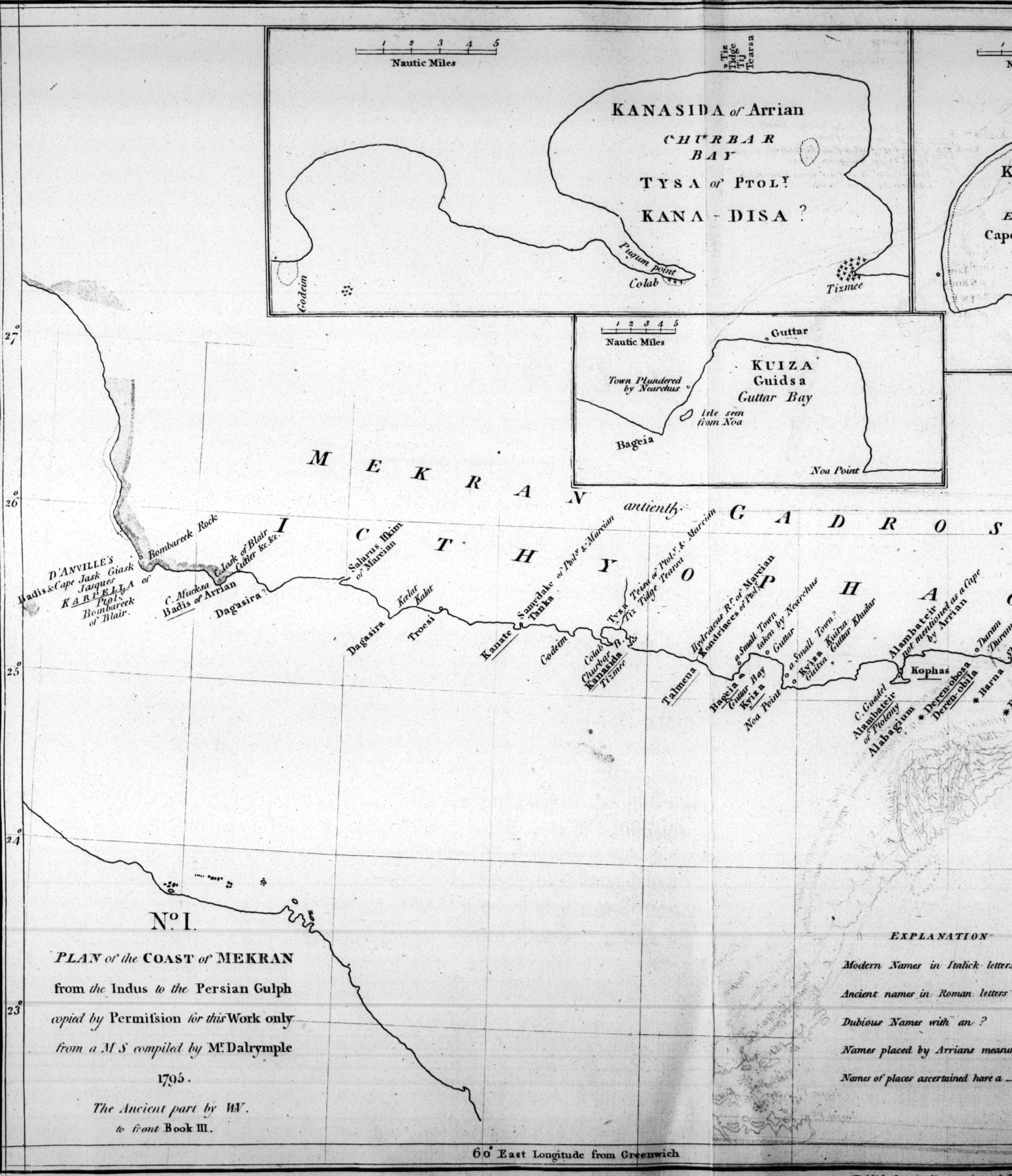
²⁶⁷ He probably joined in Karmania, but received the crown in Sufiana.

them.

COURSE OF THE FLEET DOWN THE INDUS. 165

them. The natives, as possessors of a mountainous country, were probably hardy, and accustomed to a life of pillage, neither unacquainted with the use of arms, nor without courage to maintain their independence. They are described by Arrian as not being an Indian tribe, for India ends at the Arabis; but as being the last people whom Alexander found with Indian manners. As soon as he entered Gadorfia, he was properly in Persia; and the distress he experienced in that province shall be no farther noticed than as it is connected with the navigation of the fleet, to which we must now return.

THE

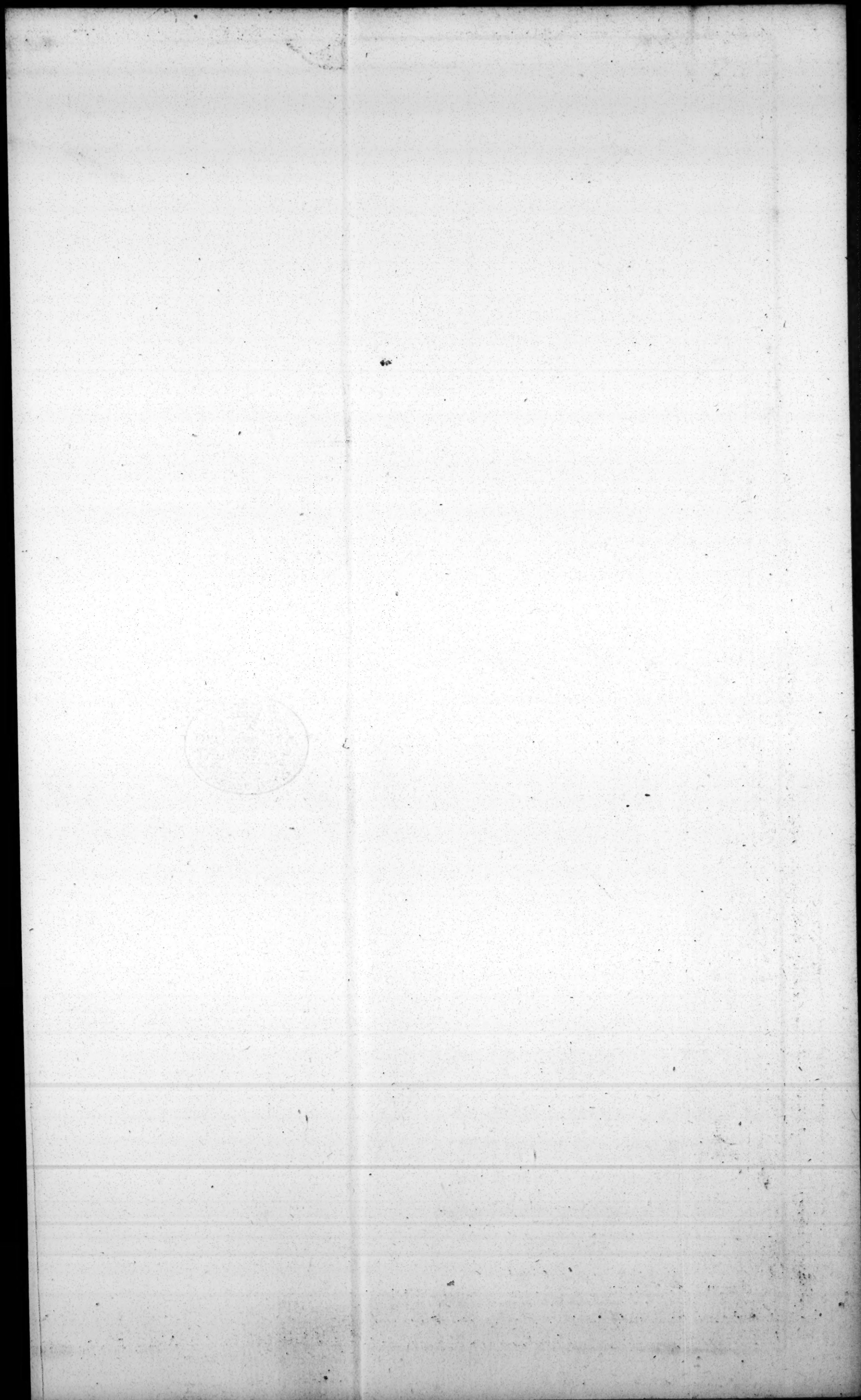


Nº I.
 PLAN of the COAST of MEKRAN
 from the Indus to the Persian Gulph
 copied by Permission for this Work only
 from a M S compiled by M. Dalrymple
 1795.

The Ancient part by W.
 to front Book III.

EXPLANATION
 Modern Names in Italick letters
 Ancient names in Roman letters
 Dubious Names with an ?
 Names placed by Arrians measure
 Names of places ascertained have a —

60° East Longitude from Greenwich



THE
V O Y A G E
OF
N E A R C H U S.

B O O K III.

COURSE from the INDUS to CAPE JASK.

- I. *Coast of the Arabies, or Arabiæ.*—II. *Coast of the Oritæ.*—
III. *Coast of the Iēthyophagi.*—IV. *Dissertations.*

I HAVE already fixed the departure of the fleet from the Indus on the second of October, in the year three hundred and twenty-six A. C. and though I might have taken advantage of Strabo's authority to postpone this date to the tenth, I still prefer the precision of Arrian to the general date of the Geographer. The north-east monsoon, which commences in November and becomes settled in December, makes a later day more agreeable; but as we shall immediately see that Nearchus, after having cleared the river, was obliged to lie in harbour twenty-four days, till the season

was

was favourable, and other circumstances of the voyage mark the commencement and vigour of the monsoon, the method pursued to fix the date is not liable to objection.

The reason for proceeding before the monsoon commenced, is ascribed by Strabo to the discontent of the natives; and we may observe, that though Mæris, the chief of Pattala, had previously made his submission to Alexander, he fled on the approach of the fleet, and no mention is afterwards made of his return, or his being brought in by the troops who were sent in pursuit of him. His flight into the desert, we may conclude, was on the east of the Indus; for had it been on the west, we should have heard of some attempt to recover him, when the army proceeded in that direction; but as no such circumstance occurs, we must suppose that he returned as soon as he heard of Alexander's departure, and endeavoured to recover the province he had lost.

This transaction throws light upon the narrative of Arrian, and reconciles the difficulty arising from the departure of the expedition before the season. Arrian¹, however, is so far from acknowledging it, that he mentions the performance of the games and sacrifices usually adopted on such occasions, which intimate neither haste or confusion at the actual moment of embarkation. But there is one

¹ The passage in Strabo is too express to be omitted.

Καὶ δὴ καὶ φησὶν ὁ Νέαρχος, ἥδη τῷ βασιλεῶς τελευτῶν τὴν ὁδὸν, αὐτὸς μετοπώρην κατὰ Πληάδος ἐπιτολὴν ἐσπερίαν ἀρξασθαι τὴν πλῆξ, μήπω μὲν τῶν πνευμάτων οὐκ εἶναι ὄντων, τῶν δὲ βαρβάρων ἐπιχειρῶντων αὐτοῖς, καὶ ἐξελαυνόντων· καθαρεῖσθαι γὰρ ἀπελθόντος τῷ βασιλεῶς, καὶ ἐλευθεριάσαι. Lib. 15, p. 721.

Nearchus says, that after Alexander was upon his march, he set sail himself on the

evening rising of the Pleias, though the wind was not yet favourable. But the natives attacked them and drove them out, having resumed their courage on the departure of the king, and wishing to recover their independence.

If these circumstances were in the journal of Nearchus, which there is every reason to believe, Arrian cannot be justified in suppressing them.

particular relating to the departure, which, if Arrian intentionally suppressed the flight of the Macedonians, seems to indicate the reality of it; which is, that the fleet, according to his own account, did not take its departure from Pattala, but from a station near the mouth of the river. This station is doubtless the post Alexander had formed, and probably at Killuta² (Killoota); for there, our author says, he had found water and good anchorage, with protection both from the tides and the monsoon. If I had any actual data for fixing the Debil-Scindy of our modern maps at the mouth of the Lari-bundar river, or could ascertain its size and position, I should have little hesitation in asserting its identity with Killuta, for Debil-Scindy is only a Persian or nautical corruption of *Dev*, or ³ Dive-il-Scindi, the island of the Scind, or Scindi.

Were I to form a position for Dive-il-Scindi from such observation as I can collect, it should lie on the east of the Lari-bundar entrance, running up from ten to fifteen miles from the bar, and then separated from the Delta by a branch or channel of the main stream, which should entitle it to its insular name and situation. The course of its shore where it formed the eastern bank of the river ought to incline north-east and south-west. Whether this is really so I pretend not to ascertain; but if ever it shall be ascertained, or if ever the mouths of the Indus shall be laid down with the same accuracy as those of the Ganges and the Euphrates, I dare to predict⁴ that, with due allowance for variation on the coast, and the

² ἀπὸ τοῦ τῆς Ναυράδου.

³ Dive is either Tamoulian or Malabar. Selen-dive is Ceylon. Lack-dives, Mal-dives, Anje-dives, are all clusters of islands. Diu in Guzerat is another form of corruption. See d'Anville Eclair.; and Selen-dib, which

we meet with in Oriental orthography, gives the change of *v* into *b*, in Dib-il-Scindy. It is written *el*, *al*, or *ul*, of.

⁴ D'Anville's account of Debil Sindi, from Pimentel, favours these conjectures. Antiq. de l'Inde, p. 38.

accumulation of two thousand years, these conjectures will not be very distant from the truth.

But if Nearchus took his departure from a station⁵ at this island, and not from Pattala, (as will immediately appear,) though it does not amount to proof that he was driven from thence by the natives, it affords great reason to suspect it, and to confirm the assertion of Strabo, who copied from the journal of Nearchus as well as Arrian.

Wherever we place this station, it was only an hundred and fifty stadia⁶, or little more than nine miles from the mouth of the river; for Arrian gives two distances, one within the bar and another from the bar to Krokala, each of an hundred and fifty stadia; and as the latter corresponds within a mile to the actual measure of the coast, we cannot without injustice suspect the former of inaccuracy.

Anno 626.
A.C. Oct. 2.
Oct. 3, 4, 5.

When the fleet weighed from this station, the first day's course down the river⁷ was only six⁸ miles, and they anchored at a creek⁹ or inlet called Stura (Stoura¹⁰), where they continued two days; on the follow-

⁵ This is the place intimated by Pliny as the Xylenopolis, from whence the voyage commenced. Unde ceperunt exordium. Lib. vi. c. 23. But the whole is dubious.

⁶ I have before examined d'Anville's stadium of fifty-one French toises, and shewn its general conformity upon the whole voyage; I pretend not to ascertain its accuracy in particulars, nor shall I trouble myself or the reader with fractions; one thousand one hundred and eleven of these stadia, with a fraction, make a degree of a great circle; fifteen of these stadia, with a fraction minus, are equal to a Roman mile of seven hundred and fifty-six toises; and sixteen, with a fraction plus, are equal to a mile English of eight hundred and

twenty-six. I shall neglect all these fractions, because accuracy is unattainable in the application of individual distances. To state this precisely where precision cannot be obtained, is affectation. I use the toise, a French measure, because Mr. d'Anville's is the best calculation on this subject.

⁷ Arrian has no where given us the name of the western channel, but Ptolemy calls it Sagapa, and places it in longitude 110° 20', latitude 19° 50'.

⁸ One hundred stadia.

⁹ *διὰ πρὸς μεγάλην*, a large nullah.

¹⁰ I shall preserve generally the Greek orthography for the contemplation of Oriental etymologists.

ing day they weighed again, but came to an anchor at Kaumana¹¹ before they had proceeded two¹² miles. In the creek here they found the water salt, or at least brackish, even upon the tide of ebb. The next day's¹³ course was little more than one¹⁴ mile to Koreatis; and scarce had they weighed from hence before they were checked by the violent agitation now visible at the bar¹⁵; for as they had proceeded with the tide of ebb, the wind was consequently in a direction exactly opposite. This brought them to an anchor again immediately; when, after waiting till it was low water, they observed that the projecting sand (which probably formed the bar) was soft and oozy near the shore, and little more than a quarter of a mile in breadth. This they determined to cut¹⁶ through, as the readiest and safest passage into the open sea. They had so far effected their purpose during the recess of the tide, that upon the return of the flood they carried their vessels through it¹⁷ in safety, and after a course of about nine miles¹⁸ reached Krokala the same day. Here they remained the day following.

Oa. 6.

Oa. 8.

Oa. 9.

¹¹ In the present desolation of this coast and the Indus, it is not probable that any relation to Stoura, Kaumana or Koreatis, should be discoverable; they appear all to be names of nullahs cut for purposes of agriculture or communication; and these nullahs, we may conclude, have been all obstructed. I preserve the names, however, for the consideration of such as may hereafter visit this country. The names in Gronovius's best MS. are written Kaumara and Koreestis. Koreacatis, Dodwel, Geog. Min. Freinshem. Curt. ix. 9. 9. and ix. 9. 20, mentions, on the authority of the academicians at Coimbra, the violent tides

on this coast, and the necessity of these nullahs, or *δωρυχίαι*, for the safety of vessels which navigate either the coast or the river.

¹² Thirty stadia.

¹³ A day not specified, but allowed.

¹⁴ Twenty stadia.

¹⁵ *Ἰππα.* Scindi bar is known to all navigators on this coast, and I imagine every mouth has its bar.

¹⁶ I have allowed two tides for this, or twenty-four hours; it possibly was one only.

¹⁷ Mouth of Lari-bundar river, in latitude 24° 44'. Rennell, Postscript.

¹⁸ Allowed two days.

ARABIES, OR ARABITÆ.

KROKALA.
CROTCHY.
Oâ. 9.
First station.

Krokala is the Crotchey¹⁹ bay of Commodore Robinson; and it is with infinite concern I repeat the complaint of Mr. Dalrymple, that the views which were taken during this gentleman's survey of the coast never reached his hands. I present to the reader, however, a Plan²⁰ of this Bay, by Lieutenant Mascall, taken in 1774; and I feel great satisfaction in exhibiting the first harbour in the Indian ocean, in which an European navy ever rode. Krokala²¹, says Arrian, is a sandy island, and such an island, dry²² at low water, we still find in

¹⁹ Written Caranchy Carrangee, &c. and by Gronovius, Κρόκελα (Croccla), from his best MS. The Greek language has no *ch*.

²⁰ Furnished by Mr. Dalrymple. Lieutenant Mascall was an officer on board Commodore Robinson's ship. [See a Plan of this Bay in Chart, No. 1.]

"From the mouth of the Larry Bunder river is seen part of the high land over Crochey. There is nothing remarkable between that place and Crochey. The land by the water-side is low, interspersed with shrubs; but up the country there are several hummocks of moderate height." Lieutenant Porter. Com. Robinson, p. 1. This is the rising to the ridge at Cape Monze, which I have marked before as the eastern limit of the Arabitæ. "Crochey (the town) was formerly under the Bloaches, but is now seized by the prince of Scindy." Id. p. 2. It is five miles from the bay, and one from a creek which falls into the bay. The people are described as civil. Possibly the Belootches are not worse robbers than their more refined neighbours.

²¹ Major Rennell supposes Crotchey to be the port of Alexander. Postscript. But that is impossible, as the fleet evidently passes Cape Monze before it reaches that port.

²² I here follow the authority of Lieutenant Mascall's drawing; but Lieutenant Porter's journal says, there are several islands to the northward; and that the entrance into the bay is generally between a promontory, on which a white tomb stands, and the largest of the islands. This island can hardly answer to the ἤσος ἀραιώτης of Arrian. Lieutenant Porter. C. Robinson, p. 1. For by the plan it appears high; and I conclude the low island mentioned by Arrian to be that sand in the heart of the bay, dry at low water. Probably the first isle mentioned at C. Eirus by Arrian, and marked as a shoal by Dalrymple, is likewise dry at low water, or visible some tides. It is sufficient, however, for Arrian's assertion, that this shoal should mark such a spot, which, though visible formerly, may be now constantly covered by the sea.

this

this bay. It lies in latitude $24^{\circ} 28'$ twelve leagues from Scindibar, and, according to Captain Prittie's chart, ten nautical miles from Lari-bundar river. The latter distance is so nearly correspondent with the measure I assign to Arrian, that I regard it as a full demonstration of the identity of the place, and a high testimony of the accuracy of the journal. If I were curious to reduce the two distances to a coincidence, I might add some fractions to the stadia, and suppose the cut through the sand²³ to have shortened the course. But I mention once for all, that where I find a general correspondence I shall not insist upon minute difficulties.

But if the distance from the bar to Crotchey is established, the course from the point of departure to the bar must be of necessity allowed; both are given at an hundred and fifty stadia by Arrian, and if one is true, the other can hardly be erroneous. However, therefore, I may be mistaken in my position of Killuta, or my conjecture of its identity with Dive-il-Scindi, I afford means for the correction of my error by any future navigator who shall visit the river with a knowledge of the present work. I conceive the cut through the sand to be made at the point where the bar formerly joined the western shore of the Lari-bundar channel; and in any position about nine miles above that, which affords security from the tide of flood and the prevailing monsoon, I consent to place the station²⁴ from which Nearchus departed.

²³ However extraordinary or superfluous an attempt of this kind may appear to modern navigators, the difficulty of carrying a fleet of Greek gallees out to sea in opposition to the monsoon, is at least as great as the danger Xerxes would have encountered in doubling Athos: and even after the neck of that

promontory was cut, he had two more to pass.

²⁴ The *ναυταθμὸν* of Arrian.

I am persuaded it is on the eastern side of the channel; but recommend it to future inquiry.

IRUS.
EIRUS.
Cape
MONZE.
Oct. 9.

²³ Crotchey town is situated about five or six miles from the place where the ships lie. It is fortified with a mud wall, flanked with round towers, and has two useless cannon mounted. It formerly belonged to the Bloachees (Belootches); but the prince of Scindi finding it more convenient for the caravans out of the inland country, which cannot come to Tatta, on account of the branches of the Indus being too deep for camels to pass, he obtained it from the Belootches by exchange, and there is now [1774] a great trade. Lieutenant Porter, p. 2.

From Porter's account, I collect that Hamilton's route must have been within the Delta, for his cafila or caravan consisted of fifteen hundred beasts, as many men and women, with two hundred horse; all these must have crossed the Indus, or Lari-bundar river, at least once, if not twice, had they marched to the westward of the stream, which, by Porter's account, appears impracticable; if so, Major Rennell's position of Lari-bundar and Dungham is on the wrong side of the river.

26 γένον κοιλπόν. Fretum sinuosum.

I would render it with an allowable licence, *a passage curving with the land.*

27 σταθίους δύο απέχουσα.

This

This harbour Nearchus thought so large and commodious²⁸, that he honoured it with the name of Alexander, and determined to avail himself of the security it afforded, till the season should be more favourable for his progress. A camp therefore was formed on shore, and fortified with an inclosure of stones to guard against any attempt of the natives; and this precaution was no more than necessary, as they were now within the confines of the Arabitæ, whom Alexander had attacked and dispersed not many days before their arrival. Security both from the natives and the season they found; but the people suffered greatly, having no water but what was brackish²⁹, and little food to support life except muscles³⁰, oysters, and another species of large shell-fish³¹ which they collected on the shore.

Such an harbour as this port of Alexander is described, ought to be more discoverable on this coast at present than in reality it is; for Lieutenant Porter slightly mentions, that as soon as you are round the Cape there is a *kind of bay*; but with whatever indifference an English navigator might view this, it was really an haven to a Greek fleet of gallies, affording good anchorage under shelter of the island; and however slight our modern intelligence is of the harbour itself, the position of it is indubitable; for Eirus is Cape Monze, and Bibacta, Chilney Isle. Upon this point there can be no hesitation, since the publication of Mr. Dalrymple's last chart of the coast. Previous to that, I had looked in vain for the two

²⁸ μέγας τε καὶ καλὸς ὁ λιμὴν. *A large and good harbour.* In what sense our author uses this expression will appear at the Arabis, or Sommeany.

²⁹ ἀλμυρὸν.

³⁰ Μύες θαλασσίους. Any shell-fish, says

Salmasius, which has two shells to open and shut. From μύιν, nictère. Exercit. Plin. p. 1129. Gronovius in loco.

³¹ Σωλῆρας is explained by neither; but is, I conceive, the Kima cockle. See *infra*.

islands described by Arrian, where I could find one only; but the new chart gives a sand (dry³² perhaps only at low water) in the very position off the Cape as laid down by Arrian, and Chilney for a second island corresponding exactly with the Bibacta of that author.

Cape Monze, according to Major Rennell³³, lies in longitude east from Greenwich $65^{\circ} 46'$, and in north latitude $24^{\circ} 55'$. Commodore Robinson's chart does not mark the longitude.

Chilney Isle³⁴ appears immediately as you are passed the Cape, lying off shore to the south-west in the very direction for covering the fleet in the bay, and of a height sufficient to interrupt the blast of the monsoon; for it is near a league long, and rises as it is exhibited in this form:  It is the more material to

SANGADA
Place.
BIBACTA
Isle.
PORT OF
ALEXAN-
DER.
Oct. 10.
Ninth day.
Second
station.

fix this point accurately, as we cannot depend fully on any other till we come to the river Arabis. From Cape Monze to that river the coast falls in with a sweep or hollow, round which we must trace the course of the fleet close in shore; but we cannot hope to ascertain the site of stations where we have in the journal itself names only without habitations; and where, if ever habitations arise, the neighbourhood of the Belootches will hardly allow them to be permanent. The place and district around are called Sangada by Arrian, and the situation of the camp was evidently on the narrow stripe of low ground which

³² Mr. Dalrymple's chart does not authorise me to say that this sand is ever dry. But the position is so precisely conformable to Arrian's narrative, that there can hardly be a doubt but it was above water, and visible to

Nearchus two thousand years ago.

³³ Postscript.

³⁴ Longitude $60^{\circ} 40'$ from Gibraltar, north latitude $24^{\circ} 57'$. De la Rochette.

extends

extends close to the sea, all round the sweep from Cape Monze to Sommeany, or the Arabis, with a chain of high land at its back, which terminates at the promontory.

In this camp Nearchus continued four-and-twenty days; during all which time the monsoon continued without wavering, and with unremitted violence. This interval brings our account down to the third of November before the fleet could again proceed; a date that accords admirably with the day assumed for the original departure from the Indus: for the monsoon changes in the middle of November, and there is always an interval of fluctuation between the termination of one and the commencement of the other. Some remission of this sort might regularly occur about the third of this month; and it will appear by the shortness of the course for the following days, and the very close adhesion of the fleet to the coast, that the fluctuation had taken place; that the wind was still adverse in general, only affording momentary remissions; that several days' course was lengthened as they approached the middle of the month; and that they did not obtain the full force of the north-east monsoon till nearly about the commencement of December. Is it possible to advert to these circumstances without confessing the internal evidence of authenticity which this journal contains; or without subscribing to the testimony of Strabo, who asserts, that Nearchus was driven out of the Pattalene by the natives? What else could have induced that commander to encounter the hazard of navigating in such a season, and the danger of impending famine, but the dread of not being able to proceed at all, unless he escaped while it was in his power?

In the name of Sangada, or at Saranga the next station but one, Mr. d'Anville is desirous of finding the modern Sangadians, or Sangarians³⁵, a tribe famous for their piracies; but their scite is on the bay of Cutch. It is not impossible, however, that they have in all ages frequented the whole coast; and that places out of their own country, if infested by them, might take their name. All the pirates on the coast lie concealed behind the head-lands to surprise the vessels as they come round. The pirates of Severndroog, on the Malabar coast, are mentioned as pirates by Strabo and the author of the Periplus; and it is equally probable, that the piracies of the Sangarians are as ancient; if so, the Port of Alexander, close round Cape Irus, was exactly one of the positions they would occupy in order to seize vessels coming from the east; and had Nearchus sailed with the monsoon, he might have found here an enemy unexpected.

DOMÆ.
Third station.
Thirty-third
day.
Nov. 3.

From this port, upon a relaxation of the wind, the fleet ventured once more to proceed on the third of November; the course, however, was apparently close in with the coast, and the progress short of four³⁶ miles. They took refuge under an isle called Domæ³⁷. The coast itself was without inhabitants and without water; but the latter was found, and of a good quality, at the distance of little more than a mile³⁸ from the shore.

³⁵ Captain Hamilton was attacked by them, and beat them off. They are mentioned also by Porter, who says they come upon the coast of Brodee, or Mekran, as far as Churbar; but their residence is Jefferabad.

I do not find Jefferabad mentioned in Rennell, except a town of that name on the east of the Ganges. I suppose this to be in Cutch, or Guzerat.

³⁶ Sixty stadia.

³⁷ There is a small island marked in Commodore Robinson's chart by Mr. Dalrymple. Whether I should call this Domæ, as I have named it in the chart, No. 1. or reserve it for two rocks mentioned afterwards, is dubious.

³⁸ Twenty stadia.

The following day they proceeded nearly nineteen³⁹ miles to Saranga, and arrived not till night. Water was found here at half a mile from the shore.

Weighing from Saranga, they reached Sakala and anchored on an open coast, when finding this possibly unsafe, they seem to have advanced again the same day⁴⁰, and passing two rocks so close to each other that the oars of a galley might touch⁴¹ both, after a course of about nineteen miles they came to Morontobara, a harbour with a narrow entrance, but safe, capacious, landlocked all round, and protected from the wind in every quarter. They thought it no small achievement to have passed these rocks in safety, for the waves ran high, and the sea was in great agitation.

I should wish to identify these rocks with the rock of Lieutenant Porter, which he lays down ten miles from Cape Monze; neither do I think the distance a great objection; for though I make it more than four-and-twenty miles by Arrian, it is evident that Nearchus kept as close as possible to the shore, making an arc of a circle, while Lieutenant Porter describes the diameter. But there are two⁴² rocks in Arrian, and only one in the English journal; this circumstance excepted, there appears no great difficulty in assigning the same position to both. I place Sakala and these rocks at no great distance from Saranga, because the fleet appears to have anchored at the former, upon coming in sight of the

SARANGA.
Fourth
station.
Nov. 5.
Thirty-
fourth day.

SAKALA.
MORONTO-
BARA, OR
MORONTO-
BARBARA.
Fifth and
sixth station.
Nov. 6.
Thirty-fifth
day.

³⁹ Three hundred stadia.

⁴⁰ Day allowed.

⁴¹ They did not pass between them, if we may judge from *ἐκπλώσαιτε, ἐκπεριπλώσαι*, and yet

διὰ τῶν σκοπέλων διεξιπλεον implies the contrary.

⁴² Within these thirty years there were three Needle rocks at the western end of the Isle of Wight; there are now only two.

rocks⁴³, soon after it had weighed on the fifth of November; and Morontobara⁴⁴ I place seventeen or eighteen miles by the bend of the coast to the north-west of the rocks. This harbour, or something to represent it, I have no doubt will be found, if ever this coast should be explored again; for the description of it is very precise in Arrian, and its name (which in the language of the natives signifies the Port of Women) is the only one of Arrian's on this coast, which is retained by Ptolemy and Marcian of Heraclea.

That the course of the fleet was close in with the shore is apparent from the particulars already specified; and that the monsoon was not yet changed is equally evident from the danger encountered in passing the rocks at Sakala, for if the wind had been at north-east it would have been off the coast; but it is clear, from the turbulence of the sea, that it still blew from the opposite direction, and lay full upon the shore. Both these assumptions will be justified still more by observing that the following day, when they left Morontobara, they preferred an intricate course⁴⁵ between an island and

⁴³ I by no means insist on Lieutenant Porter's rock for these two; though the circumstances are probable, his rock, in point of distance, agrees better with Domæ.

⁴⁴ Morontobara will hereafter obtain an etymology either Arabic or Shanskrete; and if ever this coast should be visited again, the harbour may perhaps be found, or the place occupied by it be ascertained.

ὁ δὲ λιμὴν μέγας καὶ εὐκυκλὸς καὶ βαθὺς καὶ ἄκλυτος·
ὁ δὲ εἰσπλῆς εἰς αὐτὸν γυνός.

Literally, "the harbour is large, well protected from wind on all sides, runs far within the land, and is perfectly quiet; the

"entrance into it is narrow." I render *εὐκυκλὸς* sheltered, and *βαθὺς* running inland, from Homer's *βαθύκολπος*; and I wish a reference to be made from this passage to the description of the Port of Alexander, which the author calls only *μέγας καὶ καλὸς*, large and good, and which a bay might be without being entitled to the other characteristics so particularly given to Morontobara.

⁴⁵ There is every reason to believe that it was an arm of the Arabis flowing round an island, now perhaps choked; or, if capable of investigation, of no service in the present state of nautical knowledge.

the main, (so narrow that it appeared rather an artificial cut than a natural channel,) to the open passage without side of the island.

The harbour of Morontobara, with all its conveniences, presented nothing to tempt men to a longer delay, who for almost forty days had found but a scanty supply of provisions, and seem to have supported life by such casual means as the shell-fish on the coast afforded; they left it therefore on the following day, and proceeded towards the river Arabis⁴⁶, having an island on their left, and the main on their right. The passage through this channel was somewhat more than four miles⁴⁷, but so narrow, as to appear like a work of art; the coast was woody, and the island in a manner overgrown with trees of all sorts. They did not clear the passage till the following morning, when they found the tide out, and the water shoal and broken⁴⁸; they

BIS
RIVER.
Nov. 7, 8.
Seventh
station.
Thirty-sixth
and thirty-
seventh day.

⁴⁶ Arbis, Arabius, Araba, Artabis.

See a very long note of Salmasius, Plin. Ex. 1177, to prove that Arbis is the true orthography; but C. Arrubah or Arraba proves the contrary.

⁴⁷ Seventy stadia.

⁴⁸ ῥηχέιν. Gronovius has noticed the error of former editors, who render this word usually by *rupes*, *scopulus*, *locus scopulosus*, *littus scopulosum*, &c. and in this instance, *per angusta quædam loca*; but he has not with his general accuracy defined the proper meaning. I shall every where render it either *surf*, or the *shoal* which causes the surf; for the whole coast, both of the continent and islands in the Indian ocean, is exposed almost constantly to a very extraordinary surf. See Marsden's Sumatra. And if it is not surf in this one instance, it is the breach of the sea arising from the straits, or narrowness of the passage; *κατὰ ῥηχέιν γινώσκοντες*. The word occurs frequently in the journal, and

is used ῥηχέιν, ῥηχία, and ῥαχία, from ῥήσω *frango, cum strepitu allido*. Lennep. in voce. And so ῥάχης *dorsum, à junctura vertebrarum, (potius disjuncturæ,)* capability of separation, from ῥήσω. Thucyd. lib. iv. p. 10. Scholiast. ὅθεν τὸ ἰώτιον ὁρώδης, ῥάχης καλεῖται, ὡς ἀπὸ τῆς ῥαχίας τῆς πέτρας. This seems to favour the editors' rendering *rupes, scopulus*. So also, ῥαχία ἐστὶ πέτρῳδης τόπος, περὶ ὃν περιέχεται ἡ θαλάσσα, καὶ ὁ κλύδων, καὶ ἡ τῆς θαλάσσης ὁρμή. Notæ ad Polybium. Schweighæuser, vol. v. p. 573. But, notwithstanding this high authority, I am disposed to think, that, in Arrian at least, it is the surf simply, and used frequently without reference to the rock, or rocky ground, which the surf breaks on; for at Kokala the surf ran so high upon the arrival of the fleet, that the people could not land; on the following day, however, they all got on shore, hauled up the vessels, and formed a camp. If the rocky shore

they got through however without damage, and, after a course of between seven and eight miles, anchored at the mouth of the Arabis.

This river is the western boundary allotted to the Arabies by Arrian. According to d'Anville and de la Rochette it still retains the name of Araba⁴⁹, with the additional appellation of Il Mend. Their authority for Araba I know not, but I have no doubt that it is a native term, from the preservation of it in Cape Arrubah⁵⁰, which lies not far to the westward; and that Il Mend is a title which, if due, it has acquired from the Persians. At this point we must pause, to consider the course of the fleet from the Indus. Three positions are clearly established; Krokala corresponding with Crotchey or Carantchy, Eirus with Cape Monze, and Bibacta with Chilney Isle, where I fix also the Port of Alexander; these, with the mouths of the Indus and Arabis, give five fixed points on a coast of about eighty miles. The rocks off Sakala⁵¹ are possibly without great difficulty reducible to Lieutenant Porter's rock; and Morontobara is so characteristically distinguished, that it cannot be mistaken if the coast should be visited again. Domæ, Saranga,

shore had been the obstruction, that circumstance would have existed the second day as well as the first. But a stronger instance will occur at Cape Jask, which is, by the testimony of all our navigators, a low sandy point: but there, also, the term *ἐνχέριον* is applied; where Mr. d'Anville is so misled, by reading *rupes* or *scopulus* in his authors, that to find a rock he recurs to the assistance of Bombareek, which is at seven or eight miles distance by his own account.

⁴⁹ I rather apprehend that d'Anville has been misled by the Nubian Geographer, who mentions an Hendmend and Araba, with this

addition—*Atque hinc intratur in regiones Indorum*. But both the Hendmend and Araba of the Nubian Geographer are in Segestan, far to the north of our Araba. See Nub. Geog. p. 134.

D'Anville, however, may have other authority, and certainly can interpret the Nubian Geographer better than his corrector.

⁵⁰ Arrabah, or Arraback, by Lieutenant Porter.

⁵¹ I have some suspicion that Sakala will be found to signify either *rock* or *mountain* in some of the Oriental languages. The Nile rises from a Sakala, according to Bruce and Lobo.

and

and Sakala, it will not be thought negligent to leave undefined upon a coast that is now almost desolate, and where, if villages⁵² have formerly existed, they may have been destroyed by the incursions of the Belootches.

The number of stadia given by Arrian and Strabo from the Indus to the Arabis is a thousand; and, what is not very usual in Greek authors, the particulars answer to the total. These reckoned by Mr. d'Anville's stadium make sixty-three miles and an half; but there is an omission of distance between Krokala and the Port of Alexander, and another minute one between Saranga and Sakala. The addition of these might possibly make the estimation something short of eighty miles, which accords sufficiently with the best charts I have seen. When we reflect that a Macedonian fleet spent near forty days in completing a navigation of this length, we may form a judgment of the courage requisite to undertake and execute the whole voyage. We discover, at the same time, the difficulties which arose from setting out before the regular season; and while we admire the perseverance of Nearchus under the disadvantage of adverse winds, and the pressure of famine, we have the satisfaction to find that the dates assumed are corroborated by the circumstances of the navigation.

The mouth of the Arabis⁵³ is placed by Ptolemy in longitude 105° , and latitude $20^{\circ} 15'$, and by Mr. Rennell in longitude $65^{\circ} 34'$ from Greenwich, latitude $25^{\circ} 26'$ and about $44'$ west from the western mouth of the Indus.

⁵² Sakala and Saranga do not appear as places inhabited, by the journal; and Domæ is an isle. Whether future inquiry may make this Lieutenant Porter's rock, remains for investigation. I am induced to embrace a contrary opinion, both from the distances given, and the distinction between an isle and a rock.

⁵³ Mr. Rennell has placed the Arabis to the eastward of Cape Monze in his first map, but corrected it in his second.

Arrian

Arrian mentions an island⁵⁴ at the mouth of the river, which Lieutenant Porter does not notice; but says the bar runs out a long way, and is dry in some parts at low water. There is still a small town called Sommean, at the entrance, and labouring under the same difficulty for water which is noticed by Arrian, who mentions that they were obliged to go up the country above two miles to find a well⁵⁵. Lieutenant Porter says, "every thing is scarce, even water, which is procured by digging a hole five or six feet deep, and as many in diameter, in a place which was formerly a swamp; and if the water oozes, which it sometimes does not, it serves them that day, and perhaps the next, when it turns quite brackish, owing to the nitrous quality of the earth." We shall find the same identical circumstance introduced by Arrian at a future period of the voyage. Minute facts of this nature exemplify the authenticity of the journal better than all the arguments that can be produced against Hardouin and Dodwell.

It does not appear from Arrian that the place was inhabited when Nearchus was there, but he calls the harbour large⁵⁶ and commodious, and says that shell-fish, with others of various sorts, were found here in great abundance. Marcian mentions two cities upon the river Arbis, Perfis⁵⁷ and Rhaprava on the coast between the river and Morontobara; the distance between the two latter he states at a

⁵⁴ Arrian's island is high.

⁵⁵ λακκὸν. Perhaps a pool.

⁵⁶ μέγας καὶ καλός. The same expression as that applied to the Port of Alexander. We may judge of one by the other; for Lieutenant Porter mentions no harbour here but the mouth of the river.

⁵⁷ Perfis he writes Perfith, and calls it the

capital of Gadrosia, which cannot be in this country. It should seem that he had heard of such a city, but did not know where to place it. It is in reality the Pura of Gadrosia mentioned by Arrian and others, and the sound of which is still preserved in Phir, Phor, and Phor-eh. Ptolemy has a Parfis with evidently the same confusion, p. 167. Written Ἡασις μητροπόλις for Πάρσις.

thousand and fifty stadia, which by no means agrees with Arrian, and gives reason to suspect that he confounded the Port of Women with the Port of Alexander, for his next station is Koiamba, where he fixes the limits of the Pattalene⁵⁵, possibly the Krokala of Arrian; and lastly, Rhizan and Rhizana for the termination of the coast, as it should appear, at the Indus. In the whole of this account Marcian follows Ptolemy in his list of names, but is so barren of facts, and so vague in his distances, that little information can be obtained from him. His whole length of the coast amounts to fourteen hundred and fifty stadia.

II. O R E I T Æ. O R I T Æ.

No mention is made of any stay at the Arabis, we must therefore make the fleet sail the following day, and proceed twelve miles and an half to Pagala. The course is described as close along the coast, and a surf at the place where they finished their progress, but the anchorage was good. The men were forced, however, to continue on board, and only a few landed to procure water. Such a spot as this can be characterised only by its distance; and our measures, which answer sufficiently along the coast of the Arabies, will now be less capable of accuracy in many particulars, till we reach the gulph of Persia.

They sailed the next morning, and after a course of almost nineteen miles reached Kabana in the evening. The place was only an open

ORITÆ.
PAGALA.
Eighth
station.
Nov. 9.
Thirty-
eighth day.

KABANA.
Ninth station.
Nov. 10.
Thirty-ninth
day.

⁵⁵ Marcian evidently intends to place Koi- but I suspect he has confounded the limits of amba at the mouth of the western channel; the Arabies with those of the Pattalene.

and desert shore, on which a violent surf broke, which hindered the vessels from approaching the land. The progress of these two days sufficiently indicates that the wind was not yet settled at north-east, and in the present day's course they experienced directly the reverse; for a strong gale came on from the south-west, in which two of the galleys and a transport foundered, but the course was so near the shore that the men were saved by swimming. If we advert to our date here, which is the tenth of November, we find such a coincidence with the turbulence accompanying the change of the monsoon, as cannot fail of exciting our admiration, while we observe, at the same time, that no instance of a similar calamity occurs afterwards in the journal.

KOKALA.
Tenth Station.
Nov. 11.
Fortieth day.

They left this desolate place at midnight, and reached Kokala next morning, after a course of about twelve miles. The coast here was such, that the vessels could not be drawn on shore, but rode at anchor without the surf. The suffering of the people was however so great, from being confined on board two nights³⁹, that it was found necessary to disembark them, and form a camp on shore, which

³⁹ In vessels like those of the Greeks, which afforded neither space for motion, or convenience for rest, the continuing on board at night was always a calamity. The galleys of Alexander had perhaps a deck; but the *Ἡμιόλαι* are exactly the vessels of Homer's age, the fore part and waist open for the rowers, with a deck raised over the hinder part; this in Homer is called *ἱκεῖον*, and formed an elevation on which the steersman stood. On this deck, or under it, the persons on board sometimes slept, which the poet calls sleeping

παρὰ πρυμνήσια νῆος. Od. M. 32. For there, perhaps, the cables were coiled; but, when a whole crew was to sleep on board, this was impossible, and the suffering was in proportion to the confinement. This makes Ulysses complain, that restraint on ship-board rendered his limbs rigid and unfit for gymnastic exercise; and the same confinement, Captain Bligh says, chafed the limbs of his people, against which he found no other remedy but wetting their clothes in sea water.

Nearchus fortified as usual. It is worthy of remark that, during the three days' passage from the Arabis, we hear of no provision being procured except water; neither do the places where they anchored appear villages or inhabited country; if, therefore, the stock of grain which they brought out of the Indus was exhausted, as it probably was in an interval of forty days, we can find no means of supporting life, but such a supply of shell-fish as they might have procured at the Arabis, where we are informed it was in plenty. But it should seem they knew that relief was at hand, for here it was that Leonnatus joined them, who had been left in the country by Alexander, with a particular charge to attend to the preservation of the fleet. He had, after the departure of the main army, fought a battle with the Oritæ and their allies, in which he had defeated them, killing six thousand of the enemy, and losing only fifteen⁶⁰ of his own horse, with Apollophanes⁶¹, the new-appointed satrap of Gadorfia. He now joined Nearchus, bringing with him a supply of ten days' provisions, collected by the order of Alexander, and possibly spared out of his own immediate wants. Not that this province ought to be represented as a desert like Gadorfia, but the circumstances of the time, and the resistance of the natives, rendered this supply rather proportionate to the condition of the country, than the wants of Nearchus. The attention of Alexander is still con-

⁶⁰ I never feel myself bound to account for these disproportionate numbers. Leonnatus had with him at this time, possibly, a large force of native Asiatics. If a thousand of them had been killed, they would not have been thought worth notice. These fifteen are Macedonians.

⁶¹ In another passage of Arrian, lib. vi. p. 267, this Apollophanes is said to have been deposed from his satrapy, when Alexander was halting in the capital of Gadorfia. See Gronov. p. 338. In the journal, Arrian follows Nearchus; in the history, Ptolemy or Aristobulus.

spicuous; and a second unsuccessful attempt⁶² he made in Gadorfia, when he would have hazarded famine himself to preserve his fleet, ought to exculpate him from the charge of useless vanity in penetrating through that desert region; a charge which even Nearchus is said to have countenanced.

To search for correspondent positions to these three desert stations would be superfluous; for as the next is the river Tomérus⁶³, at the distance of one-and-thirty miles, the two rivers give us the boundary of the four days' course, and as they are known points, the measures specified are sufficient to mark three places, which, being uninhabited, can be of no importance. I should have wished to have placed Kokala with precision, on account of the transactions which took place here; for besides the supply obtained from the army, Nearchus discharged several of his people, who appeared not to have sufficient spirit or fortitude for the enterprise, and received others in exchange from Leonnatus: he likewise repaired here several of his vessels which had suffered in the voyage or the storm. This proves that the weather grew more moderate during his continuance at this place, for upon his first arrival the surf was too high to admit of drawing⁶⁴ them on shore. If therefore we shall, with Rooke⁶⁵, allow ten days for the completion of these affairs, it brings the account to the twenty-first of November; at which period the wind, if it had fixed at north-east, would be off shore, and the

⁶² See *infra*.

⁶³ The Tomérus is apparently the river upon which inland Alexander halted, when he invaded the territory of the Oritæ. And probably it passes by Haûr, the capital of that tribe, who derive their name from Haûr, Horitæ, Oritæ.

⁶⁴ It is not expressly said they were drawn ashore. The author afterwards, at the Tomérus, uses the term *νελκῆσαι*.

⁶⁵ Rooke finds ten days in his author, I can only find mention of ten days' provision; but I think the allowance just.

surf consequently diminished. This accords exactly with the following day's progress, for upon leaving Kokala they sailed, for the first time, upwards of thirty miles, and it is the first time Arrian specifies their sailing with the wind ⁶⁶ settled in their favour.

The satisfaction of meeting with a supply of provisions would not be a little heightened by a sight of their countrymen again, after having experienced unfavourable weather and the danger of famine for six weeks; additional confidence also would arise, not only from the change of the season, but from a consideration of the attention paid to their preservation by Alexander: the victory of Leonnatus contributed likewise to render the Macedonian name respectable to the barbarous tribes they were now to visit. All these circumstances considered, with the certainty of finding future support from the army, if possible, we may reasonably conclude that Nearchus embarked again with more confidence than before, and that the supply of men he received from Leonnatus came on board with alacrity.

I have looked in vain for authority to give the number of gallies or other vessels of which the fleet consisted. The number of commanders appointed at Nicæa was thirty-three, and by these I estimate the gallies. There was also a greater proportion of half-decked vessels, and transports in abundance. That Nearchus had transports as well as gallies appears by the wreck of one on the preceding day; and if we were to allot him all ⁶⁷ the gallies, it would,

⁶⁶ ἀκραιῖ. See Hom. Od. Book 421. ἀκραιῖ Ζέφυρον. Schol. ἀκραιῖ πνέοντα πρὸς τὴν χρεῖαν ἔτε πλέον ἔτ' ἔλαττον. Stephan. in voce.

But there is another derivation from κεράν-νυμι, μὴ κεκραμμένον, ἀλλ' ἀκραιῖως Ζέφυρον. Purum Zephyrum. And that derivation seems peculiarly applicable in this passage. It was the

north-east monsoon settled, and without fluctuation.

⁶⁷ Q. Curtius mentions the destruction of such vessels as were superfluous before the departure from the Indus. It is much more probable that, if any were superfluous, they were laid up at Pattala, or the other dockyards established in the Pattalene.

perhaps,

perhaps, not appear like exaggeration. The gallies were all of thirty oars; if therefore there were only one man at an oar, we cannot estimate less than sixty or seventy men to each vessel, which makes the whole number about two thousand⁶⁸, exclusive of those on board the transports. This number does not appear unreasonable; and conjecture is only allowable where accuracy is not to be obtained. None of the original officers appointed at Nicæa appear in the course of the navigation, except Archias and Onesicritus. Leonnatus joined the main army in Karmania, and must have brought the first account of Nearchus's progress as far as the Tomérus.

TOMÉRUS.
Eleventh
station.
Nov. 21.
Fiftieth day.

On the twenty-first of November⁶⁹ the fleet proceeded with a fair wind, and made good a course of thirty-one miles to the river Tomérus⁷⁰. The length of the course corresponds, as observed before, to the change of the season. Commodore Robinson, Lieutenants Porter and MacCluer, Tavernier, and Thevenot, all agree in fixing this change to the middle of November. All the circumstances of the voyage conspire to prove the difficulties previous to this period, and the advantages obtained after it was past. We are arrived at the last ten days of the month; and after the commencement of December there is no fluctuation. Tomérus is described as a winter torrent, with a lake at its entrance. It appears to answer exactly to the stream Alexander had found inland very ill supplied with water, at which he halted after his pursuit of the Oritæ; and seems to come from the ridge of mountains which form the barrier of the whole coast to the north; where, in the season, rain falls in

⁶⁸ See Sequel.

⁶⁹ In making the fleet sail on the tenth day from Kokala, and before, on the twenty-fourth, from the Port of Alexander, I have given two

days which I might have added. In all that affects a system, it is more honourable to give than to take.

⁷⁰ It is written Τόμης in the Greek.

abundance,

abundance, though none is seen in the low country between them and the sea. Lieutenant Porter repeatedly mentions the lowness⁷¹ of the coast, and the appearance of the high country inland. As the same circumstance in regard to the rains occurs in Scindi from Moultan downwards, and in Egypt universally, is it not reasonable to conclude, that the same cause operates generally in the regions bordering on the tropic, and that mountains are as necessary for condensation, as vapours are for the cause of rain?

At the Tomérus, inhabitants were found living on the low ground⁷² near the sea, in cabins, which seemed calculated rather to suffocate⁷³ their inhabitants than to protect them from the weather; and yet these wretched people were not without courage. Upon sight of the fleet approaching, they collected in arms on the shore, and drew up in order to attack the strangers upon their landing; perhaps they were not unacquainted with similar visits of the Sanganians. Their arms were spears, not headed with iron, but hardened in the fire, nine feet long, and their number about six hundred. Nearchus ordered his vessels to lay their heads towards the shore, within the distance of bow-shot, for the enemy had no missile weapons but their spears. He likewise brought his engines to bear upon them (for such it appears he had on board); and then directed his light-armed troops, with those who were the most active and the best swimmers,

⁷¹ So does the journal of the Houghton Indiaman. A journal curious, because this ship kept the coast in sight from Scindi to Gomeroon, and back again; while most of the vessels which come from the eastward to the gulph of Persia stretch across the ocean from Guzerat, or the coast of Malabar, to Mascat in Arabia. Dalrymple.

⁷² βράχια, marshes or marsh ground.

⁷³ Καλύβαις πνιγνῆαις. Such are the cabins described by Cook in a thousand instances, into which you must enter crawling, and when entered you cannot stand erect. A Hottentot village is styled a Krah. What is the derivation?

to be ready for commencing the attack. On a signal given, they were to plunge into the sea; the first man who touched ground was to be the point at which the line was to be formed, and was not to advance till joined by the others, and the file could be ranged three deep. These orders were exactly obeyed; the men threw themselves out of the ships, swam forward, and formed themselves in the water, under cover ⁷⁴ of the engines. As soon as they were in order, they advanced upon the enemy with a shout, which was repeated from the ships. Little opposition was experienced, for the natives, struck with the novelty of the attack, and the glittering of the armour, fled without resistance. Some escaped to the mountains, a few were killed, and a considerable number made prisoners. They were a savage race, shaggy ⁷⁵ on the body as well as the head, and with nails so long and of such strength, that they served them as instruments to divide their food (which consisted indeed almost wholly of fish), and to separate even wood of the softer kind. Whether this circumstance originated from design, or want of implements to pair their nails, did not appear; but if there was occasion to divide harder substances, they substituted stones sharpened instead of iron, for iron they had none. Their dress consisted of the skins of beasts, and some of the larger kinds of fish ⁷⁶.

Nearchus staid at the Tomérus six days, during which time he drew some of his vessels on shore and repaired them; and this

⁷⁴ Will not the reader think that I describe the landing of a party, from the Endeavour, in New Zealand, under protection of the ship's guns?

⁷⁵ These Oritæ are the next tribe to the Arabies or Belootches, whom Tieffenthaler thus

describes from Oriental authority: " Cette nation est barbare et féroce, portant les cheveux longs et sans ordre, laissant croître la barbe, et ressemblant à des faunes ou à des ours." Vol. i. p. 119.

⁷⁶ Seal-skins possibly.

interval being specified, may make the former allowance of ten days at Kokala appear too large. It is, however, a conjecture I have followed rather than formed; and considering that they were with their countrymen, had much business to transact, and had fortified a camp, I can hardly suppose there is an excess.

The fleet left the Tomérus on the sixth day, and, after a passage of nearly nineteen miles, reached Malana in the evening. At Malana, Arrian fixes the boundary of the Oritæ; and the distance from the Arabis, the eastern limit, to this cape, being accurately specified by Mr. Dalrymple's chart, enables us to compare the stadium of Arrian with our modern measures precisely. The opening of the compasses gives eighty-five geographical, or nearly an hundred British miles, and Arrian's total sixteen hundred⁷⁷ stadia. This is so exact a coincidence with the stadium of d'Anville, on a coast where there is little indenture, that it may be deemed a strong confirmation of the measure assumed by that able geographer. It is true that the particulars assigned to each day's progress give but fifteen hundred stadia; but, in the course from Pagala to Kabana, the manuscript of Gronovius reads four hundred and thirty, instead of three hundred, which makes the whole sixteen hundred and thirty; and this Arrian expresses by a round number. So satisfied am I with the precision of my data here, that I have no scruple in fixing Pagana, Kabana, and Kokala, by the measure of each day's sail; and as I observe Arrah⁷⁸, Cudjerah, and Kingalah in Commodore Robinson's chart,

MALANA.
CAPE
MALAN,
or MORAN,
Nov. 27.
Fifty-sixth
day.
Twelfth
station.

⁷⁷ D'Anville's stadium gives sixteen to a mile British, with a very small fraction.

⁷⁸ There is a chart by Lieutenant Mascal, who was a volunteer under C. Robinson, which places these three names differently from the

Commodore, and in positions which I could perhaps adopt; but it varies so essentially in other points, that Mr. Dalrymple does not esteem it highly.

I should have been happy to make them correspond in position as well as number; not that these obscure places are important, but because minute coincidences⁷⁹ are satisfactory in geography. The Oritæ, who inhabit this coast, Arrian describes as dressed and armed like the Indian tribes; but their customs, manners, and language mark them as a different race.

The territory of the Oritæ is well defined by Arrian, bounded on the east by the Arabis, on the north by a chain of mountains⁸⁰ running inland parallel with the coast, and on the west by a ridge shooting off from the grand chain, and touching the sea at Malana, or Cape Moran. This cape does not appear to project far or rise high, and I imagine is connected by high ground with Cape Arrabah⁸¹, about thirty miles to the westward. There can be little doubt that the name of Cape Arrabah⁸² preserves the original appellation of the Arabite Belootches of antiquity, for though it is not within the limits assigned to that tribe by Arrian, the influence of these mountaineers has extended itself along the coast through the whole province of the Oritæ, and as far as Cape Guadel. We have the fullest evidence of this from Lieutenant Porter⁸³, who says

⁷⁹ If it should be thought necessary to investigate this point, a short table will shew all the particulars at one view.

	Stadia.	Miles.
From Arabis to Pagala,	200	12½
{ to Cabana,	300	19
{ or by the MS.	430	27
to Kokala,	200	12½
to Tomérus,	500	31¼
to Malana,	300	19
	1500	94½
With the number of MS.	130	8
	1630	102½

⁸⁰ "The land from hence (Sommeany Arabis) runs along extremely low next the sea; but the back is very cragged, and continues so to Cudjerah." Lieutenant Porter, p. 3.

⁸¹ Arrabah, Arraback.

⁸² A plan of the bay, formed by the projection of Cape Arrabah, is given in the chart furnished for this work by Mr. Dalrymple; but as Nearchus did not anchor here, we are no farther concerned than to mention it.

⁸³ P. 6.

expressly,

expressly, that the coast as far as that cape is now called Bloachee (the country of the Bloaches or Belootches), and from that cape to the gulph of Persia, Brodia. The Belootches, therefore, in carrying their arms westward, carried their original name with them, which is still preserved in Cape Arrabah; and perhaps, if we could investigate the name by which they distinguish themselves, we should find, whatever they may be styled by their neighbours, that they still retain some relation to this original appellation in their native language.

Mr. d'Anville⁸⁴ places Haûr as the modern capital of this province on the river Tomérus, corresponding with the ancient Ora. In this, I conceive, he follows the Nubian Geographer⁸⁵, who carries a route from the Indus through Manhabere, a town on the Arabis, and through this Haûr to Firabuz⁸⁶ in the Mekran, or Gadrosia. Oræa is mentioned by the author of the Periplus, but with so little precision, that nothing satisfactory can be collected from him. It is evident that this writer had personally visited the coasts of Arabia and Malabar; but he doubtless sailed with the fleet from Egypt, which at that time crossed the ocean by the assistance of the monsoon, and never approached the coast of Gadrosia. He

⁸⁴ Eclaircissement, p. 42. Antiquit. p. 44. the twelfth century, if refined of its dross,

⁸⁵ Al. Edrisi. Nub. Geog. Lib. Relax. would be found to contain much pure metal. Mr. d'Anville could have performed this service.

⁸⁶ Et via quæ ducit a Dabil (Debil-Scindi), ad Firabuz transit per Manhabare, et inter Manhabare et Firabuz media est urbs quædam parva habitata, Haur appellata. Urbs autem Firabuz est incolis et mercatoribus frequens, pertinetque ad provinciam Mekran. Nub. Geog. p. 58.—If the Nubian drew his information from Arabic sources, from whence did the Arabians draw? This Arabic work of

The Dabil of Al Edrisi he places three stations from the mouth of the Mehran (the Indus), that is seventy-five miles, which makes it nearly agree with Pattala. I suspect that Deb-il-Scindi, in its Oriental sense, comprehends the Delta, however afterwards applied to a part of it. Nub. Geog. p. 57.

therefore mentions only the bay of ⁸⁷ Terabdon ⁸⁸, which the ancients place between Cape Jask and Guadel, and then, with the incidental notice of Oræa, passes to the Sinthus ⁸⁹. He seems to have mistaken the site of this place; for he says it is at the mouth of a river, and in the bay, whereas that imaginary bay terminates at Guadel, and this is far to the eastward of it. This error, if he really means Oræa for Ora, is excusable only on account of his not having visited this coast; for whatever he saw himself, he describes graphically. Ora ⁹⁰ is laid down by Ptolemy in longitude $102^{\circ} 20'$, latitude $23^{\circ} 40'$; but as little would be gained by the method I have pursued in correcting his error, it is here omitted. The general name of Gadrosia is extended sometimes by the ancient geographers to the whole coast between Karmania and the Indus, as that of Mekran is by the modern Orientals; but the distinction ought to be made, of what is desert and what is habitable. The country of the Arabies and Oritæ appears full of inhabitants, and no notice is taken of the army's experiencing any distress before Alexander crossed the mountains into Gadrosia; from that line it appears that the desert commences, in passing which the army encountered greater difficulties than in the whole course of the service.

In detailing the coast of the Oritæ, I find only three fixed points, the two rivers Arabis and Tomérus, with Cape Malana or Moran. Thevenot ⁹¹, in his passage from the gulph of Persia, mentions Cape Malan, but he never came in sight of it; and his evidence, there-

⁸⁷ Perhaps the Paragon Sinus of Ptolemy.

⁸⁸ On this subject, see *infra*.

⁸⁹ Sinthus is the name he uses for the Indus; and this proves his acquaintance with the native appellations Scind and Scindi.

⁹⁰ By Mercator's map it does not differ much from the Ora of the Periplus. The confusion seems to be general.

⁹¹ D'Anville Antiquit. p. 44.

Thevenot, Eng. ed. p. 194. Part II.

fore,

fore, amounts to nothing more than proving the existence of the name still in the language of the country; and that Malan is the Moran of Porter cannot be doubted, either from its situation or the similarity of sound. The interchange of the liquids *l* and *r* occurs in numerous instances, exclusive of the deception to which the ear is subject in receiving foreign sounds. The three other stations on this coast I can fix only by the distances given; they all appear uninhabited; and when we find names⁹² given to obscure places so readily by Arrian, we are led to conclude that he had natives on board, to whom they were familiar.

As Lieutenant Porter mentions three names on this coast as well as Arrian, which are Arrah, Kudjerah, and the rocks of Kingalah⁹³, it is possible that Kudjerah may be the Kokala of Arrian; for we are to remember, the Greek language has no sound correspondent to our English *ch*, and Cochela is not very distant in sound from Gudjerah. Resemblance of this kind, where distances or local situation agree, is strong presumptive proof. Kabana is supposed to be Kingalah by de la Rochette.

The extent of this coast, given by Strabo, is eighteen hundred stadia; and if he drew from the original journal as well as Arrian, it is extraordinary that they should differ to the amount of an hundred and seventy stadia in so small a number: but this is perhaps only an additional instance of the little dependance upon all numerals in Greek manuscripts, rather than a proof of disagreement between the authors. Arrian's stadia, as corrected by the manu-

⁹² Porter's are three names merely, and this is an Oriental practice; for thus Niebuhr speaks of the coast between Suez and Jidda. On appelloit ancrages tous les endroits où

notre petit vaisseau pouvoit être à l'ancre. Voyage, tom. i. 230. Amsterd. Ed.

⁹³ Hinglah. Mascall.

script⁹⁴ of Gronovius, produce nearly an hundred and two miles; Strabo's, an hundred and thirteen; and both accord so nearly with the chart of Commodore Robinson, which gives somewhat more than an hundred miles, that nautical mensuration, without the assistance of instruments, can hardly be reduced to greater conformity.

Here I should have closed the account of the Oritæ, but at Malana we find a circumstance recorded by Arrian which demands no small degree of attention; for here it is that he introduces the mention of a phænomenon, which, however familiar to the navigators of the present day, was, in his own age, a matter of no small curiosity. The sun, he tells us, was seen by Nearchus in the meridian to the north, and the shadows fell to the south. I shall translate the whole passage, before I enter upon the discussion of a subject which has exposed my author to much reprehension.

“ As they sailed along the coast of India, that is, the country of
 “ the Arabitæ and Oritæ [for the Ichthyophagi are not accounted an
 “ Indian tribe], Nearchus says, that the shadows had not the same
 “ effect as in those parts of the earth with which they were ac-
 “ quainted, for when they stood out to sea a good way to the south-
 “ ward, the sun⁹⁵ was either vertical at noon and no shadow was
 “ to be seen, or so far to the north that the shadow fell to the south.
 “ The northern constellations, which are always above the horizon,
 “ set almost as soon as they rose; and others which they were used
 “ to contemplate, were either close to the horizon or not visible at
 “ all. In this Nearchus appears to assert nothing improbable; for at

⁹⁴ This MS. Gronovius found at Florence, ority. It is possibly the MS. brought by in the Grand Duke's Collection. See Præfat. Aurispa from Constantinople in 1403. See ad Lect. It evidently contains readings of Roscoe's Life of Lorenzo, p. 30. of numerals is no small proof of its superi-
⁹⁵ I take some liberty to make this con-
 sistent.

“ Syene

“ Syene in Egypt, when the sun reaches the summer tropic, they
 “ shew a well, in which at noon there is no shadow; and as the same
 “ circumstance occurs in Meroe, it is probable that in India also, which
 “ lies towards the south, the shadow should be subject to the same
 “ law, and more particularly in the Indian ocean, which extends
 “ still farther to the southward.”

In this account there is apparently little to perplex; but when we consider, that at Malana Nearchus was in north latitude $25^{\circ} 16'$, where these circumstances could not occur, it is not very easy to discover the reason for introducing them at a place not within the limit of the tropic. We must recollect also that we are now arrived at the latter end of November, when the sun was to the southward of the equator; and therefore, whatever licence we may assume in rendering the text, when it asserts that they stood out far to the southward, we may be assured that no Greek vessel ever stretched so far from the coast as to verify this phenomenon in the manner specified by the historian.

Neither Alexander himself, or any detachment from his army, were ever farther to the south than the mouth of the eastern branch of the Indus; and there, at the summer solstice, the sun might be vertical: but, from all we can collect, Alexander did not reach that point till the latter end of July, when the sun was again on his journey to the south; neither is it perfectly ascertained that the mouth of the Nulla⁹⁶ Sunkra is within the tropic: Mr. Rennell's last map and Mr. de la Rochette, it is true, bring it within that

⁹⁶ See Gosselin *Geog. des Grecs*, p. 32; within the tropic. *Plin. lib. ii. c. 75.*
 who mentions that Onesicritus places Pattala

line; but till it shall be determined by observation⁹⁷ there is still room to doubt.

If this phenomenon, however, was to be recorded, it is extraordinary that it should not have found its place at the point farthest southward which the Macedonians ever reached; and that it should be reserved for Malana, when the fleet was nearly two degrees to the north of the tropic, and the sun southward of the equator. I would save the credit of Arrian, if it were allowable, by supposing that he spoke for Nearchus in this passage generally, rather as a circumstance known than experienced; but truth compels me to confess, that to my apprehension his language is too express to admit of general interpretation: it is Nearchus speaking of what he had seen⁹⁸ himself, and I cannot acquit Arrian without making Nearchus subject to the imputation.

Nearchus, it is true, is enrolled by Strabo in the same list with Onesicritus, Megasthenes, and other writers upon India, as indulging too much in narrations which are fabulous; but we have at this day far better means of comparing the accounts of these authors with the actual state of the country than Strabo had, and I must acknowledge that I have found Nearchus a most faithful and unerring guide. If I cannot excuse him in the present instance, I can join him in his error with companions so illustrious, that I hope the reader will pardon me for entering upon a digression in which the knowledge of the ancients in geography is materially concerned.

⁹⁷ Mr. Dalrymple's chart, by C. Prittie, places Pandrummee in latitude $23^{\circ} 13'$; and in his chart of Scindi, latitude 23° .

If, therefore, Pandrummee is the eastern

mouth, it is consequently within the tropic. I only mean to say it is not fixed by observation.

⁹⁸ ὡφθην αὐτόν.

The increasing length of summer days and winter nights, in proportion to the approach towards the pole, was known as early as the age of Homer, and the corresponding phenomenon of the sun casting no shadow at the summer tropic⁹⁹ had evidently been observed by the Egyptians previous to all the astronomy of the Greeks with which we are acquainted. The spherical figure of the earth also, we are now told, was no secret to the Indians, Chaldeans, Egyptians, and Phœnicians; or if their discoveries, as antecedent to history, are the less regarded, we know from facts that Thales was acquainted with this important truth. If science had proceeded regularly upon these principles, the properties of a sphere might have led men to contemplate the proportion of these phenomena as well as the phenomena themselves, for they wanted neither knowledge or industry to observe them; but they failed in the result and combination of their observations. Thus it happened, that although Thales was acquainted with the spherical figure of the earth, and Anaximander had described the known world on a globe, yet it was not till three hundred and fifty years after Thales that Eratosthenes drew a line parallel to the equator, which suggested the doctrine of latitudes to the school of Alexandria, and finally enabled Ptolemy to apply both longitude and latitude universally to the science.

Arrian is contemporary with Ptolemy, but so little was he acquainted with this great discovery, or rather the application of it, that he has in no one instance made use of the term. It is evident, however, that he had a knowledge of the phenomenon produced by

⁹⁹ See Bruce on the Obelisks, Norden, Pocock, and Blair's excellent treatise on the Rise of Geography, who mentions that the well at Syene was made for the use of Eratosthenes: but there is much reason to give it a higher antiquity.

the sun in the tropic, from his mention of Syene in this passage; and he could not be ignorant that southward of Syene the sun might be seen¹⁰⁰ to the north; for he has in another passage noticed the solstitial rains in Ethiopia (Nubia or Abyffinia), as the true cause of the inundation of the Nile; and whoever verified this fact, which was known to Strabo¹⁰¹ as well as Arrian, must have observed the shadow falling to the south. Arrian discovers his knowledge of all these circumstances in reasoning upon this extract from Nearchus, and Nearchus seems to have been as cautious in giving this fact as Arrian is in repeating it, when he says it took place, not actually upon the coast, but at some distance out at sea. So likewise Arrian does not assert that Malana lies upon the same parallel with Syene, but carries the parallel out into the ocean. As all this was really true, if the fleet had been at Malana during the summer solstice, neither of these authors is culpable for any thing more than for asserting that as seen, which only might have been seen at another season; and if it were not for the positive assertion (*ὡφθην αὐτοῖσι*), *they saw it themselves*. The whole passage might be received generally or hypothetically, and the credit of both be established.

But if they cannot be defended, it will at least be some palliation of their offence, and a matter of no small curiosity, to shew how generally the vanity which gave rise to this error, existed in the writings of the ancients. Great travellers and great conquerors never thought their accounts or their progress sufficiently magnificent, unless they were carried to the boundaries of nature. Alex-

¹⁰⁰ As he says himself in Meroë. Meroë, according to Bruce, is Abyffinia. ¹⁰¹ Strab. lib. ii. p. 98.

ander is conveyed by his miraculous¹⁰² historians to those regions on the north, where perpetual cold and darkness reign; on the east and south, to the utmost limits that the heat allows to be inhabited. But without recurring to such admirers of the hyperbole as Q. Curtius, we must reflect that Orpheus¹⁰³ carries his Argonauts to the Cimmerians, who never see the sun. And where do they dwell?—that is no easy matter to discover: but their country is excluded from the solar rays by the Alps, the Rhipæan mountains, and the rock of Gibraltar¹⁰⁴. Homer claims the same privilege for Ulysses, for he conveys him to a region which enjoys the polar day¹⁰⁵, which his commentator assures us must be the country of the Cimmerians, and yet the poet informs us that this was in the territory of the Læstrygons, and Læstrygonia is in Italy, just three days sail from Circe and the bay of Naples. Cæsar¹⁰⁶ speaks with the caution of an historian when he says there was no night¹⁰⁷ in the extremity of Britain, or the islands¹⁰⁸ lying north of Mona. Such, he says, was the information he received, but he had no opportunity of ascertaining it; he observed himself only, that in Britain the summer days

¹⁰² Q. Curt. lib. ix. c. 9. Ne naturam quidem longius posse procedere. Brevi incognita nisi immortalibus visuros.

The whole of this subject is worthy of discussion at large, if I could have ventured to indulge in it.

¹⁰³ Orph. Argonaut. l. 1116.

¹⁰⁴ The reader may think I indulge a vein of ridicule, but it is serious truth. Orph. Argonaut.

ἔπειτα δὲ Κιμμερίοισι
Νῆα Θοὴν ἐπαύοντες ἰκάνομεν· οἱ δ' ἄ τ' ἐ μῆνοι

Ἀργῆς ἀμμοροὶ ἴσι πυριβρόμα ἡλίοιο·

Ἐν μὲν γὰρ Πίσταιον ὄρος καὶ ΚΑΔΠΙΟΣ αὐχὴν

Ἀντολίας ἔργον· ἐπικέκλιται δὲ πελώρη
Ἄσσοι ἐπισκιάουσα μισημέρινον ἡέρα Φλέγη.
Δέσπον αὖ κρύπτει Φάος ταυνηκίης Ἀλπίης

Κείνοισι μερόπισσιν, ἀχλὺς δ' ἐπικέκλιται αἰεὶ. 1125.

The uniting of the Rhipæan mountain, Calpe, and the Alps is given up even by the commentator.

¹⁰⁵ Εγγὺς γὰρ νύκτος τε καὶ ἡμέρας ἴσι κέλευθοι.

Od. K. 86.

¹⁰⁶ Bel. Gal. lib. v. c. 13.

¹⁰⁷ If, by no night, he intends to say that it is not absolutely dark, he is not guilty of an error.

¹⁰⁸ He seems to mean the Hebrides.

were longer than on the continent. Pytheas¹⁰⁹ of Marseilles went farther north himself, he was at Thule, or Iceland; and here, he says, the day and night were each of six months continuance; a fact which is true only immediately at the pole, whereas Iceland unfortunately is not within the arctic circle.

I have not introduced these several accounts for the purpose of exhibiting them in a ludicrous view, but to shew that travellers, poets, and historians, have all conspired in placing a true phænomenon in a false latitude. They had all heard that this took place somewhere in the north, and they have all fixed it at the extremity of their own knowledge, or the knowledge of the age they lived in. If, therefore, I cannot acquit Arrian or Nearchus of a similar error, I have at least, according to my promise, given them such companions in their error as to reconcile the reader, in some degree, to a vanity which seems to have pervaded so great a proportion of our ancient authors, and which may be thought pardonable at least, though by no means worthy of imitation. I trust that the general veracity of Arrian in his detail of facts will not be impeached by this one lapse, and to prevent such an imputation is the only excuse I have to plead for this digression.—I now return to conduct Nearchus along the coast of the Ichthyophagi; a part of his voyage where he experienced every calamity but adverse winds, and where no commentator has ventured to trace his progress.

¹⁰⁹ Pytheas is reprobated as a fabulist by Strabo, i. 64. ii. 104.; but he has found favour with his countrymen; for Huet thinks him not quite a dealer in fiction, and Gosselin discovers that, though he speaks little truth, he exhibits a knowledge drawn from purer sources, and a specimen of that geography which, though antecedent to all history, was better than that of the Greeks. This is a system

of Gosselin's, and by no means the valuable part of his work. *Geog. des Grecs*, p. 45, et seq.

Pytheas says, the tropic of Cancer becomes (or stands in lieu of) the arctic circle; which Gosselin explains, by supposing that he means the tropic of Cancer is always visible above the horizon. Strab. 114. Gosselin 48.

III. ICTHYOPHAGI.

THIS desolate coast, extending from Malán to Cape Jask, is not less than four hundred and fifty miles in a right line, and nearly six hundred and twenty-five miles, or ten thousand ¹¹⁰ stadia, by the course of the fleet. It is not meant, however, to infer that an hundred and seventy-five miles, the difference between these two numbers, is wholly imputable to the course of the fleet along the shore; for the coast lies generally straight, and the indenture of the bays is not deep. We may suppose that the pressure of famine augmented the efforts of the navigators; while the acquisition of a pilot, and the advantage of the prevailing wind, contributed to lengthen each day's course. We shall find, therefore, that their progress was now sometimes a thousand stadia, or upwards of sixty miles a-day; and as proofs will arise, that they did not always adhere so closely to the shore as in the other parts of their voyage, it may be presumed their means of judging distances were diminished, which caused part of the error in their reckoning; and which error naturally tended to increase their estimation of the measure.

It is necessary to premise these circumstances, because the stadium of d'Anville is less applicable to this coast, exactly in proportion to the difference between four hundred and fifty and six hundred and twenty-five; and as no such variation occurs in the former part of the voyage, and none so great will occur in the gulph of Persia, it becomes more requisite to point out the causes of variation here; the

¹¹⁰ Strabo says seven thousand four hundred, p. 720. This will be examined more correctly hereafter.

principal of which are, the distresses that caused distances to appear longer, at the same time that they engaged the mind too much to allow of accurate calculation.

A coast which furnished nothing but fish, which afforded no characteristic distinction to its inhabitants but the name of Fish-eaters, presented no consoling ideas to a body of Greeks, with whom the want of bread was always considered as famine¹¹¹: and though turtle is mentioned as found on this coast by Arrian, and a tribe called Turtle-eaters by Marcian¹¹² of Heraclea, it is not to be supposed, that because turtle affords a delicious repast in modern estimation, that it was by any means acceptable to a Grecian palate. I rather suspect that *Icthyophagi* and *Chelonophagi* stand in the Greek text as appellations bordering on contempt, or at least as intimations of misery; and though I can find no express testimony of antipathy conceived by the Greeks against this species of food, neither can I find any evidence that they made use of it, as is noticed in regard to the shell-fish found in the Port of Alexander and the river Arabis. We shall have reason to observe as we proceed, that fish is almost the only means of supporting life, or furnishing the conveniences of life, such as they are, to the natives; that their houses are constructed with the larger bones¹¹³ of fish, and thatched with the refuse; that their garments are of fish-skins; that their very

¹¹¹ *Σίτος*, the general term, means bread, as *bread* with us is the general term for food. There are many instances of the Greeks considering the want of bread as famine; and a very particular one in Roman history. At Avaricum Cæsar's troops had plenty of meat but no bread, and this was considered by him as a sufficient reason to offer to his army a proposal for quitting the siege.

¹¹² Hudson. Geog. Min. Mar. Herac. p. 22.

¹¹³ The whale, which we shall hereafter find frequented this coast, might supply ample materials, as we see by the jaw sufficiently common in England. Shells, or rather large conchs, are mentioned, lib. vi. p. 262, as forming part of these houses, perhaps the roof.

bread is a fishy substance pounded and preserved; and that even the few cattle they have, feed on fish. The same observations occur to modern travellers who have visited this coast. Thevenot, Tavernier, and Niebhur, seem to comprehend the coast of Persis and Karmania as under the same circumstances with that of the Ichthyophagi; and Edward Barbosa, who was pilot on board one of the Portuguese fleets which first visited this coast about the year one thousand five hundred and nineteen, has the following remarkable passage: "They have few ports, little corn or cattle; their country is a low plain and desert; their chief support is fish, of which they take some of a prodigious size; these they salt, partly for their own use and partly for exportation; they eat their fish dry, and give dried fish likewise to their horses and other cattle." So invariable has been the misery of this coast for two thousand years! and so positive are the assertions of modern voyagers in correspondence with the testimony of Arrian!

The modern name of Mekran appears to be the Persian or Indian appellation for the whole of this coast from the Indus to Kerman or Karmania, so called in the first instance from its commencement at the Indus or Mehran, and augmented afterwards by the title of Kutch Mekran, from Kidge or Kutch the capital; distinguished, however, by the more modern division of Bloachee and Brodia, the limit of which is at Guadel: but in the time of Alexander the title of Ichthyophagi was confined to the inhabitants of the coast, while the country within land, from the confines of the Oritæ to Karmania, was styled Gatrofia, almost equally desolate, and as incapable of supporting an army as the coast.

¹¹⁴ Ramusio, vol. i. p. 295.

This country Alexander had evidently entered before the fleet had reached Kokala, as Leonnatus joined Nearchus at that station, having been left behind for that purpose when the main army had advanced into Gadoria. The difficulties this army experienced are foreign to the present purpose, but the attention Alexander paid to the preservation of the fleet is connected with the voyage; and a reference to his conduct will tend more effectually to exculpate him from the charge of vanity imputed to him in this part of his expedition, than any other arguments which can be produced.

It is mentioned¹¹⁵ expressly, that when Alexander entered this province it was his intention to proceed along the coast, to examine what harbours it afforded, to sink wells, and provide whatever else might afford accommodation for the fleet; but he soon found that, from the nature of the country, this was impracticable. He sent down Thoas, however, with a small body of horse to make observations, which amounted to no more than a confirmation of the misery of the few inhabitants to be found there; and that even water, which was scarce¹¹⁶, was brackish also, and obtained only by opening holes in the sand or beach. The army, therefore, was obliged to advance inland; and here the length of the marches to reach water harraffed the men and killed the beasts. It happened, however

¹¹⁵ Arrian, lib. vi. 262. Strabo, lib. xv. 722. ancients and moderns as salt or nitrous, it may be presumed that all the waters in the country partook of this quality. Such Arrian represents them here, and such Lieutenant Porter says they are at Sommeany. If the Sommeany river itself were not brackish, the natives would not have cause to open the sands for better, and the water in these openings ceases to rise fresh the second or third day.

¹¹⁶ When we find in Otter, tom. i. p. 409, no less than five rivers specified in this province, we may be led to think, that more is said of the want of water than is true; but I shall shew hereafter, (see article Cyiza, river Hydriakus,) that two at least of these rivers were salt or brackish, and from the nature of the soil all along the coast, described both by

that at one station he met with a supply of corn, and this, notwithstanding his own wants, he destined for the support of the fleet, fixing his seal upon it, and ordering it to be conveyed down to the coast; but distress prevailed over the fear of punishment; the escort broke the seal, and supported their own lives by the supply entrusted to their charge; neither did Alexander, knowing their sufferings, think this a time to punish their offence. He made a second attempt by sending down Cretheus with another supply of no great importance, and a third when he dispatched Telephus with a small proportion of corn ready ground, having previously directed the natives in the upper provinces to collect dates, sheep, or even salt provisions, if by any means the preservation of the fleet could be effected. Sixty days¹¹⁷ did the army struggle with their distresses before they reached Pura¹¹⁸, the capital of this desert; and during one part of their progress so imminent was the danger, from the failure of water and the ignorance of the guides, that had not Alexander put himself at the head of five horse, (all that were capable of service,) and pushed down to the sea-side, where he found water by opening the sands, it is confidently asserted that the whole army must have perished. They proceeded along the coast for seven days, supplied by the same means, till the guides recovered the track, and conducted them safe to Poora¹¹⁹.

There is something in this account which induces us to think that one distress, the want of water, would have been less experienced on the coast than within land; and during these seven days it is

¹¹⁷ Strabo. Arrian says expressly, from the time they left Ora.

¹¹⁸ I shall write Poora, which is the Greek pronunciation.

¹¹⁹ The present capital of Mekran is Kidge.

Cheref-eddin, vol. ii. p. 417. French edition. Poora, which is the Poreg or Phoreg of the Nubian Geographer, seems however still a place of some relative importance.

probable that Alexander, seeing nothing of his fleet, despaired of its safety; for he could not know that Nearchus had been detained near a month by the monsoon, nor properly calculate the reason of his delay. It is certain that Nearchus found water in the same manner as the king; both were directed by the natives, and several voyagers acquaint us, that wherever palm-trees¹²⁰ grow, however arid the soil, there is always water to be found, by opening the ground to the depth of from ten to fifteen feet.

I cannot account for the sixty days attributed to this march through Gadoria; the distance through a sandy desert could not be much longer than by sea; and how four hundred and eighty miles¹²¹ should require such a length of time seems a considerable difficulty. Arrian mentions that the marches were protracted to the destruction of numbers; and Strabo specifies that they were two hundred¹²², four hundred, and even six hundred stadia, that is, sometimes as high as thirty-seven miles a-day; a length incredible; and the more the length is increased, the less it agrees with the number of the days.

As no solution of these difficulties occurs, I shall only state the position of the army at Poora and the fleet at Malana, according to the dates given by the historians; and this seems necessary, as we

¹²⁰ The palm grows in Egypt; and when the Egyptians had poisoned the water in the Kalish of Alexandria, Cæsar opened wells on the coast.

¹²¹ Four hundred and eighty miles give eight miles a-day; a march not too short in an impracticable country, if it can be made to accord with the other forced marches; and perhaps we ought to compensate the particular length of some days march, with the general difficulties which rendered others short.

¹²² There is something unaccountable in Strabo's stadia, for if they are those of d'Anville, two hundred are only twelve miles and an half; no very extraordinary day's march: and if they are the Olympian stadia, six hundred make seventy-five miles; a march which is impossible.

	Miles English.	Miles Roman.
200 stadia of d'Anville,	12½	Olympian, 25
400 ditto, —	25	Ditto, 50
600 ditto, —	37½	Ditto, 75
		shall

shall have no farther reference to Alexander till Nearchus found him in Karmania. He had left Pattala a month or six weeks before Nearchus, that is, some time in August¹²³; what time he continued in the country of the Arabies and Oritæ does not appear, but from a circumstance which occurred in Gadoria, and the sixty days employed in that province, we shall bring him to Poora¹²⁴ in the latter end of November; and as Nearchus reached Malana on the twenty-seventh of November, we may conjecture that the seven days' march of Alexander along the coast of the Ichthyophagi, at the western extremity, took place during the very time Nearchus lay at Malana, or had just commenced his course at the eastern limit of the same tribe. I have entered into these particulars in order to connect the motions of the fleet and army, and have no small pleasure in finding that they correspond with each other. Another object was to prove, in opposition to all the historians, that the penetration through the desert was not a mere idle suggestion of vanity, but part of that great design which Alexander had conceived of opening a communication by sea with India: the three attempts which he made in the midst of his own distress to assist the fleet, establish this point as the first object of his mind; and the loss which he suffered fell perhaps chiefly upon the Asiatics, who now composed the bulk of his army, for the Macedonians do not appear to have been weakened, either upon their arrival in Karmania, or from the transactions in which they were afterwards engaged.

¹²³ See Anamis, *infra*.

¹²⁴ Otter, tom. i. 408, mentions Kié, or Gué, as the capital of Mekran; but as he makes Kié and Kiz, or Kidsj, two distinct places, and distinct they really are, it is highly probable that

he is mistaken, as he disagrees both with the Arabian Geographer and Cheref-eddin. It should seem that Phoreh is the ancient, and Kidsj the modern capital.

ICTHYO-
PHAGI.

BAGASIRA.

Nov. 28.

Fifty-seventh
day.

Thirteenth
station.

We left Nearchus at Malana on the twenty-seventh of November, where he staid only that day, and, weighing at night, proceeded thirty-seven miles to Bagasira. There was a good harbour here, and a village called Pafira¹²⁵, about four miles up the country. The site of this station answers to a creek in Porter's chart to the eastward of Cape Arraba, and which, in Mascall's chart, obtains the name of Jerkumutty¹²⁶, but the distance is only fifteen miles. We cannot, however, well be mistaken, because the next day's sail is round Cape Arraba; and as no distance is specified for the doubling of that promontory, the thirty-seven miles applied to the whole are sufficiently correspondent: the text does not justify this allotment, but as the Cape is a fixed point, there is little danger of an error.

Upon the mention of Ba-gasira, I must be permitted to notice, that the term Gasira indicates an Arabian navigation on this coast previous to the age of Alexander; for it is neither more or less than Gesira, signifying in Arabic an island or peninsula confessedly, and, as I apprehend, a cape likewise. It is remarkable that, on the coast of the Ichthyophagi, this term occurs twice, in Ba-Gasira the first station but one, and Da-Gasira the last but one. It occurs, likewise, in the Periplus of the Erythræan sea, with the transposition of a syllable, where Ba-rygasa is either Guzerat¹²⁷, or the gulph of Cambay, and Ba-rygasa corrected is exactly the Ba-Gasira applied by Arrian to the bay east of Arraba. I appeal, then,

¹²⁵ De la Rochette places Pafira to the westward of Cape Arraba instead of the eastward; and his whole distance from the Toméris to the Cape is reduced to nothing. Has he not mistaken the Jerkumutty creek for the Toméris? Pafira is possibly a corruption of Bagasira.

¹²⁶ This chart of Mascall's is not from his own observation, and therefore far from cor-

rect. Jerkumutty is ill-applied; it belongs to Churmut, the Calametta of the Portuguese, the Kalama of Arrian. From the first view of the two words, who would conceive that Jerkumutty and Kalama were related?

¹²⁷ The fluctuation or corruptions of this word are endless; for we find Gasira, Gesira, Geriza, Geziret, Djeziret, Guzerat, &c. &c.

to the professors of Oriental literature for the interpretation of Ba, for it is a component part of many names on this coast, as Ba-lomus, Bar-na, Ba-dara, A-la-ba-geion, Ba-geia, Ba-dis; and, wherever it is employed, I can point out a gulph or bay, as it is used in Ba-rygaza for the gulph of Cambay, and in this passage of Arrian, for the bay formed by Cape Arraba. I had looked for an opposition in Ba and Da, suspecting that Da, Dah, or Dag¹²⁸, signified the *head* of a cape, and Ba the *neck* or *falling-in of the land*, in contradistinction; but my friend Dr. Russell, whom I consulted, gave me no hope of finding any such primitives in Arabic, where they ought to be looked for. I have only to add, that as a bay¹²⁹ occurs almost to a certainty in every instance where Ba is applied as an adjunct, it is an extraordinary coincidence of sound with our native term; and I look with no little curiosity to an etymology of it, if it should be discovered in Arabic, Persic, Pehlvi, Shanskrete, or any native dialect of the coast.

The fleet weighed from Ba-gafira early in the morning, and stretched out round the cape, which projected far into the sea, and appeared high and bold. After doubling the head, they were obliged to ride at anchor without landing the men, as the surf ran high upon the shore¹³⁰: some of the people, however, were with difficulty landed, in order to procure water; this was effected by opening pits upon the beach, but the quantity was small and bad. Though Arrian has assigned no name to this cape, there is no possibility of a mistake in calling it Cape Arraba, a name which still preserves the title of Arabies, given to the Belootches by Arrian, whose

CAPE
ARRUBAH.
ARRABA.
ARRUBAK.
Nov. 29.
Fifty-eighth
day.
Fourteenth
station.

¹²⁸ Dag^h, in Turkish, is a mountain; and Dahr, in Persic, a head officer: if derived from any root signifying a *head* it would answer in this instance; but that is not allowed by Mr. Jones or Dr. Russell.

¹²⁹ Our word Bay, is from Beagan to curve or bend. Junius in voce.

¹³⁰ ἐν ᾧ. Petrosam littus, according to the translators.

influence,

influence, as I have before observed, reaches much farther westward at present than this promontory. The island Karnine, which Arrian places two day's sail from hence, corresponds so precisely with Ashtola¹³¹, the only island worthy of notice on the coast, that there can be no error in assuming both names for the same spot; and if the island is right, the cape cannot be misplaced.

The next day's sail was only twelve miles and an half to Kolta; and that of the day following something more than thirty-seven to Kalama¹³².

KOLTA.
Nov. 30.
Fifty-ninth
day.
Fifteenth
station.

KALAMA.
Dec. 1.
Sixtieth day.
Sixteenth
station.

I have before taken notice that the measures on this coast tend almost regularly to an excess, and the numbers specified between Malana and Kalama prove this. Fourteen hundred stadia produce eighty-seven miles; and if I had added a distance for doubling the cape, the disproportion would have been still greater. In eighty-seven miles there is an excess of twenty-two, for Commodore Robinson's survey gives only sixty-five; and in my account there can be no mistake, unless I have been too desirous to make Malana and Morán the same, which is hardly possible, as the previous measures all correspond. We must impute, therefore, this excess either to the circuitous course round the cape, which seems more than requisite, considering the wind which blew; or to the error of Nearchus's reckoning. I incline to the latter, because I consider the cape and Kalama as fixed points; the former from the circumstances of the navigation, the latter by the mention of an island lying off shore at this point. For I have been enabled to discover the position of

¹³¹ Ptolemy has an island in this sea called Asthæa, placed by his longitude indeed opposite to the river Arabis; but as there is no conspicuous island on the coast except Ashtola,

there is every reason to suppose, that, however misplaced, Asthæa has a relation to Ashtola.

¹³² Kalama. Kalyba. Gron. MS.

Kalama by extraordinary good fortune, and find that the Churmut river of Robinson is synonymous: if this is capable of proof, what latitude ought not to be given to conjectural reconciliations? What credit is not due to Mr. Dalrymple, who recommends the preservation of all names as they stand in authors who have visited the spot? In a Portuguese manuscript of Resende, in the British Museum, we have a map of this coast, in which Passaum (Possam) is laid down very well, and the next station on the east, Rio de Kalameta. Kalameta [Kaulmet] is evidently the medium between the Churmut of Robinson and the Kalama of Arrian. I consider this station, therefore, as fixed with the utmost precision; and the island Ashtola, or Karnine, mentioned by Arrian as lying off this place, completes the evidence.

That Karnine¹³³ is the modern Ashtola, there can be no doubt; for though the journal places it about seven miles from the coast, while it is in reality double that distance, this ought not to appear a difficulty, for Nearchus did not visit it. It is visible¹³⁴ from Cape Arraba, and perhaps during the whole passage to Kalama; but, in judging distances by the eye, possibly Nearchus was not so skilful as our modern seamen. Lieutenant Porter describes Ashtola as nearly three miles long, with two or three bays on the north side, where turtle may be caught in great abundance: the passage between this and the main is clear; but on the south side there is a rock with foul ground, and overfalls for twelve miles. From the same memoir we have an account of the coast from Cape Arraba, on the east side of which a bay¹³⁵ runs in so deep as to make the cape appear like

¹³³ Karnina. Kanina. Gron. MS. opt.

¹³⁴ Lieutenant Porter, p. 4.

¹³⁵ It is in that bay I place the anchorage.

an island ¹³⁶, with a smaller one that has shoal-water on the western side. The coast from hence to the westward is very craggy for seven or eight miles, being, as I imagine, the termination of that branch which shoots from the great chain inland, to the sea, forming the boundary between the territory of the Oritæ and Gadoria; and the rise to this branch possibly commences at Morán.

At Kalama, the natives were disposed to be hospitable; they sent a present of fish on board, and some sheep; but the very mutton was fishy, as were all the fowls they met with on the coast: neither is this extraordinary, for there was no herbage to be seen; and the animals, as well as the inhabitants, fed on fish. A few palm trees were observed about the village, but the dates were not in season ¹³⁷.

From Kalama they set sail the following day, and, after a course of little more than twelve miles, anchored at Karbis, which is the name of an open shore, with a village called Kyfa, about two miles from the sea ¹³⁸. The inhabitants fled upon the approach of the ships, and nothing was found in the place but the boats which the wretched fishermen of the coast used, and some goats which they seized and carried on board. Corn they searched for without success, and their own stock ¹³⁹ was almost exhausted.

KARBIS
COAST.
KYSA
VILLAGE.
Dec. 2.
Sixty-first
day.
Seventeenth
station.
KISSA.

¹³⁶ An additional reason for its name, Ba-Gafira.

¹³⁷ *χλωρά* in the text. *Green*.

It is not impossible that the appearance of this fruit may be adduced to determine the season of the voyage; for those who have been on this or the neighbouring coasts, cannot be ignorant of the time of year, when the date is green. I know not how to suppose that this can be the case in a northern latitude, however near the tropic, in December; nor,

on the other hand, could I easily abandon all the data, by which I have determined the season of the voyage, from a contradiction of this kind. However the naturalists may determine this point, the monsoon, which regulates my whole process, is, in my estimation, a foundation which cannot be removed.

¹³⁸ Gron. MS. opt. Kissa.

¹³⁹ Probably what they had obtained from Leonnatus.

The following day they doubled a cape which projected nine miles into the sea, and, after getting round, anchored in a safe harbour called Mosarna.

As Mosarna is the station at which the voyage is to assume a new appearance, it becomes necessary to establish the site of it with precision; and in this there would be no difficulty if there were any harbour, bay, or bight within a day's course from Cape Passence. The cape we cannot be mistaken in, as the island of Karnine, or Ashtola, fixes Kalama, and the course from thence; while the projection of Arrian's nameless cape corresponds almost exactly with that assigned to Cape Passence or Posmee by Lieutenant Porter: but there is, in fact, no harbour here, or what might be deemed an harbour¹⁴⁰ even for a Greek fleet, represented in the charts; and Commodore Robinson assured me that the chart of his survey is accurate. If so, modern geography can afford us no assistance, and we must only suppose that, if such a harbour formerly existed, it is now choked up. That there was one can hardly be doubted, for Mosarna is comparatively conspicuous, being mentioned both by Ptolemy and Marcian as the boundary of Karmania and Gadrosia. Where to fix that boundary inland may be a difficulty; but Arrian, who calls the country inland Gadrosia, and the coast Ichthyophagi, takes no notice of Karmania till he comes to Cape Jask. On the contrary, Ptolemy and Marcian consider the whole coast as Karmania from Mosarna to Cape Jask; and from thence to the river Bagrada in the gulph of Persia. Be this as it may, my present purpose is to shew that Mosarna must be placed at some short distance to the westward of Cape

PASSENCE.
 POSMEE
 Cape.
 —
 MOSARNA
 Harbour.
 Dec. 3.
 Sixty-second
 day.
 Eighteenth
 station.
 No day speci-
 fied by Ar-
 rian, but al-
 lowed.

¹⁴⁰ *ἡ λιμὴν ἀκλύστη* is Arrian's expression; it means *land-locked*, or at least so sheltered as to be a quiet harbour.

Paffence, in consequence of the fleet having doubled the cape that day, and come to an anchor near it in the evening. Arrian gives no number of stadia for this day's work, except his mention of the extent of the promontory; and as we have met with the same omission on the doubling of Cape Iru or Monze, when the fleet anchored immediately in the bay which joins it, we may conclude the same circumstance took place upon the present occasion.

There is a passage in Lieutenant Porter's memoir, which, if I understand it right, confirms the position I assume for Mosarna. "Cape Posmee appears like the top of an old barn in coming from the eastward, but varies according to its different points of view, which I have endeavoured to delineate as exact as possible; and *from whence* is formed a small bay, at the bottom of which is a small town called according to the name of the cape, chiefly inhabited by fishermen." Now if it is allowable to interpret (*from whence*,) from Cape Posmee, that is, to the westward of Posmee, this position would answer exactly; but it is evident the chart does not authorise this, for the chart places the village of Paffence or Posmee eastward of the cape, and in the bay formed by the projection; and here, if the text of Arrian had not been positive to the contrary, I should have placed Mosarna.

I state the evidence on both sides, and I confess my disappointment in not being able to reconcile the apparent difference, as this village is still a point for the caravans to make from within land; and the dingies¹⁴¹, or vessels of the country, still resort hither for dates, cotton, dried hides, and salt-fish; a trade which gives a relative importance to the place, conformably to my ancient authorities.

¹⁴¹ Lieutenant Porter.

At Mofarna, Nearchus found a pilot who undertook to conduct the fleet to the gulph of Persia; he was a native of Gadrosia, and from the name (Hydraces) given him by Arrian, I imagine, an inhabitant of Hydriacus, a town near the bay of Churbar or Chewabad, which I shall hereafter have occasion to mention. The minute circumstance of meeting with a pilot at this place denotes something more commercial than any thing that has yet occurred on the coast; and Arrian suggests, that from hence to the gulph of Persia the voyage was more practicable, and the stations ¹⁴² better known. Upon the acquisition of Hydraces, or the Hydriacan, two circumstances occur, that give a new face to the future course of the voyage; one is, the very great addition to the length of each day's course; and the other, that they generally weighed during the night: the former depending upon the confidence they acquired by having a pilot on board; and the latter, on the nature of the land breeze. I must recur to both these circumstances as soon as the fleet leaves Mofarna; but, at present, I shall take the opportunity of laying down the detail of this coast from Mofarna to Badis, where it ends, by forming a Table from Ptolemy and his copyist Marcian, compared with the order of Arrian's stations, so that the whole of our ancient authorities may be exhibited at one view.

¹⁴² Τὰ δὲ ἀπὸ τούτου ἐκείτι χαλεπὰ ἦν, ἀλλὰ μᾶλλον τι ὀνομαζόμενα, ἔστι ἐπὶ τὸν κόλπον τὸν Περσικόν. Which Rooke translates: *Less difficult to be passed, though much more famous in story.* in opposition to those obscure coasts or villages where they had hitherto landed. *Names more familiar;* at least I have not written nonsense.

I am not sure that I render ὀνομαζόμενα right, but I apprehend it means, places better known, Porter bears evidence to the better appearance of the country between Churbar and Jask, p. 9.

TABLE for comparing ARRIAN, PTOLEMY, and MARCIAN.
I C T H Y O P H A G I.

[illegible]

In this Table I have given the number of stadia as they appear in Arrian and Marcian; but as all Greek numerals are defective, and as I have already partly accounted for the inaccuracy of Nearchus's reckoning on this coast, so I imagine the numerals in Marcian¹⁴³ are still less to be depended on, his total rarely agreeing with his particulars, and his order of names not being correct. Equally inaccurate are the longitudes of Ptolemy, and yet, from a comparison of the three, the whole may admit of regulation, and the errors be made mutually to correct each other: of this something more will be said. If I prefer the authority of Arrian, it is not from predilection, but because Nearchus's journal, standing upon each day's work in the order it arose, must be more authentic (if we have a faithful copy of it) than any thing Ptolemy could obtain from the information of others.

The Table commences from Mosarna, and ends at Bombareek, the Karpella of Ptolemy.

It does not appear that any supply was procured for the fleet at Mosarna but water¹⁴⁴, and perhaps fish; but taking the pilot on board, they weighed anchor in the night, and proceeded forty-seven¹⁴⁵ miles to Balómus. The length of this day's course is such as has not occurred before, and must therefore be imputed to the charge Hydraces had taken of the fleet; and we shall find, on some of the following days, their course extended to even fifty-five or sixty miles; not that it is intended to assert that these measures are correct, but only that their progress was much increased and per-

BALÓMUS.
Dec. 4.
Sixty-third
day.
Not specified,
but allowed.
Nineteenth
station.

¹⁴³ Marcian himself acknowledges the great difficulty of giving distances accurately, from a variety of causes, in the proem to his work, well worth consulting.

¹⁴⁴ Καὶ ὕδωρ αὐτῶν ἢ καὶ ἀλίης ὥκειον.

And if Passene is Mosarna, Lieutenant Porter's memoir is in perfect correspondence.

Dried fish he specifies as an article of trade; and adds, "Water is to be procured here in the same manner as at Sommeany. Goats also, but very lean, and not reasonable."

The people are Blochees, and very civil.

¹⁴⁵ Seven hundred and fifty stadia.

haps their ideas magnified in proportion. The circumstance of their failing in the night is likewise to be noticed, for though this may have occurred accidentally before, we shall now find it a prevailing practice; and as this is an additional proof of the advantage gained by the acquisition of a pilot, it is important to consider the cause which led to the adoption of this practice.

I know not that I am authorised to say, it is an universal cause, but doubtless it is general, that in every region within the limits of the trade winds or monsoons, a land breeze blows during the night, and a sea breeze during the day. Mr. Marsden, in his *History of Sumatra*¹⁴⁶, has given a curious and philosophical account of the means by which these effects are produced. With the cause I am not concerned, but the effect is, that, “on the west coast of Sumatra, the sea breeze usually sets in, after an hour or two of calm, about ten in the forenoon, and continues till near six in the evening; about seven, the land breeze comes off, and prevails through the night, till towards eight in the morning, when it gradually dies away”¹⁴⁷. This is Mr. Marsden’s account; and if his reasoning upon the cause is just, as apparently it is, it must produce the same effect wherever the same circumstances exist; and that this effect takes place upon the coast where we are now employed, is a fact capable of proof.

Captain David Rannie¹⁴⁸ mentions the land breeze upon this coast, as well as those of Malabar and Guzerat; and he adds afterwards¹⁴⁹ expressly, “if a land wind blows from these coasts, either in the night or morning, a ship working along may depend upon a sea breeze, or at least a wind along the coast, from the north

¹⁴⁶ From p. 15 to p. 19.

¹⁴⁸ In Mr. Dalrymple’s Collection, p. 87, et seq.

¹⁴⁷ P. 16.

¹⁴⁹ P. 88.

“west-

“ westward ”, to carry her in shore again, and neither is the land
“ or sea breeze ever attended with squalls of thunder or rain, as the
“ land winds frequently are on every coast of India.”

Here is a collection of circumstances dependant on the invariable course of nature, which throws more light upon the journal we are contemplating than could have been expected to be obtained at the distance of so many ages; the tranquillity of the sea, the advantage of different breezes, and the security of navigation, all contribute to the accomplishment of this voyage, as a prelude to the communication with India, in vessels of such a fort as must probably have perished on any other coast of equal extent: but there is a peculiarity in this evidence of Captain Rannie, that accounts for a circumstance in the voyage which, without it, would have been inexplicable. We have seen the fleet pass two capes, Arraba and Posmee, with some symptoms of alarm or difficulty, and both noticed in the journal; but we are now approaching a third at Guadel, which Arrian never mentions. We should reasonably be surprised at this, as the doubling of a cape is always an atchievement in the estimation of a Greek navigator; but having now a native pilot on board who was doubtless acquainted with the nature of the winds, it is evident he took advantage of the land breeze to give the fleet an offing, and an head-land was no longer doubled by creeping round the shore to its extreme point. This is clearly the reason why we hear nothing in Arrian of Ptolemy's Alabagium ”, or Alambateir,

¹³⁰ “ Before you come to Cape Guadel, “ the gulph.” J. Thornton, in Dalrymple's
“ if the eastern monsoon leave you when you Collection, p. 66.
“ cross the tropic, your best course is to stand
“ in for the shore, and so ply it up; because
“ there you shall have the land breezes in the
“ night, and the sea breezes in the day many
“ times, and also a current setting to the
“ westward, until it meet with the current off

“ From the Arabic article Al in this word, I find fresh proof of an Arabian navigation on this coast; and I am persuaded that Al-abagium and Al-ambateir will be found to have an Arabic etymology.

the prominent feature of this coast; the difficulty was surmounted without danger, and therefore passed over without notice. I anticipate this observation as it is connected with the knowledge of the winds, which we have here acquired, and with the skill of Hydraces, who was now on board.

Balómus is not noticed by Ptolemy or Marcian, nor is their Zorambus mentioned by Arrian; if, therefore, it had stood in the journal posterior to Barna, instead of prior, there would have been little doubt of its correspondence with Zorambus. Even now, there is reason to suppose it the same, from the respective omissions; and if, upon these grounds, it should be thought right to reduce the three to a consistency by an inversion of the order, Nearchus might claim the preference, as his journal is kept from day to day. The resemblance of names would justify the following correction, upon which the preceding Table has been constructed.

<i>Ptolemy and Marcian.</i>	<i>Arrian.</i>	<i>Ptolemy and Marcian reduced to Arrian.</i>
Mofarna.	Mofarna.	Mofarna.
_____	Balómus.	Zorambus.
Badara, or Barada.	Barna.	Barada.
Zorambus.	Dendróbosa.	Derenóbila.
Kophas.	Kophas.	Kophas.
Derenóbila.	_____	_____
Alambatier.	_____	<i>Guadel.</i>

The distances are omitted in both; those of Arrian because they are evidently too large, and those of Marcian because they do not correspond. The real distance by the chart is not more than seventy miles, or, with allowance for the coast, eighty-two; whereas the particulars of Arrian make the total one hundred and nine, and those of Marcian sixty-two.

Balómus

Balómus is a village on an open shore, and no day is specified in the journal till they arrived at Dendróbosa. A day is, notwithstanding, allowed to each station which is named, as an error is of less importance on this side than on the other, and may be easily corrected, if the excess is too great, when Nearchus joins the army again in the gulph.

The next station is Barna, twenty-five miles from Balomus, a village only, but recommended by some circumstances of distinction; for here the inhabitants were found not so utterly savage in their manners and appearance, and some cultivation was observed both of fruit-trees and gardens. The palm is mentioned without any notice of its fruit, and the gardens are described as producing flowers and myrtle¹⁵¹, of which they made chaplets¹⁵²; indulging, for the first time perhaps since the voyage commenced, one of their native¹⁵³ luxuries.

From Barna the fleet proceeded¹⁵³ twelve miles, to Dendróbosa; and here the ships could not approach the shore, but rode at anchor. This circumstance may induce us to suppose, that the whole course from Mosarna to this place is the course of one night, and to the evening of the following day; if so, it makes thirteen hundred and fifty

BARNA.
Dec. 5.
Sixty-fourth
day.
BARADA.
BADARA
of Ptolemy.
Twentieth
station.

DENDRO-
BOSA.
Dec. 6.
Sixty-fifth
day.
Δενδρόβουσα.
Perhaps DE-
RENOBILLA
of Ptolemy.
Twenty-first
station.

¹⁵¹ μύρτιναι. 2?

¹⁵² The pleasure which the Greeks received from wreaths and chaplets in their convivial hours, is too notorious to insist on. The expression, as it stands in the printed copies, is, ἀβρα, ἀφ' ὧν στεφανώματα τῇσι κομήτησιν ἐπλέκοντο; rendered, *flores è quibus paganæ corollas texebant*; but which should rather be, *corollæ texebantur paganis innectendæ*. A piece of gallantry either way, not unlike that of British sailors and Otaheite women. But Gronovius's

best MS. reads κόμησι, instead of κομήτησι, *their own head*, not *the head of the villagers*. I am sorry to lose a circumstance which bears so much resemblance to the manners of modern voyagers; but I think the middle verb, ἐπλέκοντο, confirms the reading of Gronovius.

¹⁵³ Περιπλώσαντες intimates a cape or projection here; possibly the high land of Daram mentioned by Lieutenant Porter; and consequently Ba has the sense assigned.

ployed are to be admitted with some reserve, and with this observation, that there must be an excess in the distance, as eighty-two miles would carry us to Alambateir, or Cape Guadel; and Arrian has still four hundred stadia to Kophas, which precedes it. That the course is only the work of one night and day I am inclined to believe, though I mark it otherwise in the margin, for the reason already given; and this is the more probable, as the fleet is said immediately afterwards to have weighed from hence at midnight.

That Dendróbosa¹⁵⁴ is the Derenobilla of Ptolemy, and that Ptolemy's order ought to be inverted, receives the sanction of Hudson¹⁵⁵; who says, he once thought the same. Why he changed his opinion does not appear, but the name differs no more in reality than Deren-óbosa, Deren-óbola, Deren-óbila, and I imagine Deren, the constituent part of the name, is still preserved in the Daram, or Duram, of Lieutenant Porter, who places this as a high land on a part of the coast between Cape Passence and Guadel, in a situation which would correspond with Deren-óbosa; as I conjecture Shied and Muddy Peak would agree with the other names of Arrian, if they had been inserted in Commodore Robinson's chart.

KOPHAS.
KOPHANTA.
Dec. 5.
Sixty-seventh
day.
Twenty-
second
station.

From Dendróbosa the fleet weighed at midnight, and reached Kophas¹⁵⁶, after a passage of twenty-five miles. And here a variety of difficulties arise, which I despair of solving to the satisfaction of

¹⁵⁴ The change of letters in this word is justified by the organs of speech, and exemplified in *Típn*, Greek; *Tener*, Latin; *Tender*, English.

¹⁵⁵ Hudson Geog. Min. Marcian, p. 23.

¹⁵⁶ Ptolemy appears to use this name as a plural, *Kóφαρα*. It occurs but once in Arrian, and then without an article; but Marcian uses it, *ἀπὸ δὲ Κόφαιτος*, which marks Kophas as the right name.

the reader. I place Kophas to the eastward of Alambateir, or Cape Guadel, because Ptolemy, Marcian, and Arrian, all concur in the same assertion; but de la Rochette carries it to the westward, into the bay formed by the projection of that headland. This can hardly be justified in opposition to all the ancient authority we have, however obscure it may be. This cape is the most conspicuous feature upon the whole coast, and forms the termination eastward of a vast imaginary bay, which Ptolemy calls Paragon Sinus, and the author of the Periplus, Terabdon. The western extremity they place at Karpella¹⁵⁷, so that if the existence of this bay were established, it would be near three hundred miles across; but it does not exist. The coast rises gently, indeed, about half a degree towards the north, during its whole course; and though there are two or three small indentures, there is no general curvature whatsoever. The mistake of Ptolemy (of far less magnitude than his error in regard to the peninsula of India) admits of a solution nearly self-evident; for the fleets from Egypt which sailed with the monsoon from the promontory Syagros in Arabia, if they ever made the coast of Gadoria, made it at this cape of Alambateir, as a point of eminence, and left all the coast from Cape Jask on their left out of sight; this naturally raised the idea of a curve inwards, because no land was seen; and if Ptolemy knew any thing of such vessels as sailed from the gulph of Persia, or if any did in reality sail, they also, from the moment they doubled Cape Jask, took advantage of the monsoon, and did not creep along the shore like the fleet of Nearchus, but

¹⁵⁷ Upon consulting other passages of Ptolemy, it does not appear that he uses κόλπος precisely as a bay. His κόλπος ἀνταίθης, in the gulph of Persia, is not a bay: but Francklin, when at Maskat, uses a peculiar expression—“Cape Rosalgat, which is opposite the Scin-

“*dian Gulph*;” apparently giving support to the idea of calling that sea a gulph which lies between the coast of Arabia and Scindy, in which the entrance into the gulph of Persia is disregarded. See Francklin’s Tour, p. 35.

flood off from one headland to another, and avoided the interruption which the land winds or the nature of the shore presented. It is, therefore, the discovery of Hippalus, the knowledge of the monsoons, which preceded the age of Ptolemy, that gave a different idea of this coast to the mariners of his time, from whose information he drew his plan of this great bay; and it is modern geography alone which has destroyed his curve, and restored the right line of Nearchus. So consistent is truth, and so erroneous is conjecture.

We shall find, however, that the general arrangement of names in both these authors corresponds; and though it is highly extraordinary that no notice of Cape Guadel occurs in Arrian, still as Ptolemy places Kyiza immediately to the westward of Alambateir, and Kophas to the east, we must admit that the Kyiza of Arrian, coming next in succession to Kophas, naturally concludes Alambateir between the two, and reconciles both¹⁵⁸ authors happily to each other.

CAPE GUADEL.

ALABAGEION¹⁵⁹. ALAMBATEIR of PTOLEMY.

Longitude				Latitude			
		°	'	°	'	°	'
by Ptolemy	-	101	0	20	0		
by MacCluer,	-	60	34	25	7		
and from Ferro,	-	17	40	Robinson,	25	4	
		78	14				
Ptolemy corrected by Goffelin,		72	0				

¹⁵⁸ Marcian, as the copyist of Ptolemy, the Arabic AL is visible. This is Ptolemy's own word. Alambateir is from Marcian, and is always included in this estimate.

¹⁵⁹ The Western point of Guttar Bay is the Latin copies; and Ambateir is not without called BAGEIA; and the etymology of that a relation to Bageion, if it were discoverable. word would explain ALA-BAGEION, in which

There

There is some great error in the copies of Ptolemy here, for Kyiza is placed 15' to the east of Alabagium, although it is to the west of it; and Bagia Prom. in the same longitude with Alabagium, though it is a whole degree to the west.

The head of Cape Guadel stretches out parallel with the coast like the Pharos of Alexandria, and being joined to the main by a neck of land not half a mile over, makes two bays, one to the eastward and the other on the opposite side; that on the west is largest and most sheltered, with twelve or thirteen fathoms at the entrance, and shoaling to the upper part. The town of Guadel is situated close under the north side of the cape; that on the east is small, and not well sheltered, in which, however, we must suppose Kophas to lie, and possibly near the point marked at its entrance from the east. Mr. Dalrymple has enabled me to present the reader with a plan of this bay, and the soundings will shew, that in whatever part of it we place Kophas, there is a sufficient depth of water for Greek gallies; possibly, at the favourable time of the year when Nearchus sailed, such shelter as the shore itself afforded was ample security. Between this bay and the other on the western side there is a neck which joins the peninsula to the main, and which has been fortified by a wall ¹⁶⁰ with towers. There are still the remains ¹⁶¹ of a town built with stone, but the present inhabitants live in mat houses, and trade, which has been formerly considerable, is now ruined by the miserable state of the country ¹⁶². Water is procured here by opening pits on the beach; goats, sheep, and fowls are likewise to be purchased. These circumstances, insignificant in themselves, are of

¹⁶⁰ Possibly a work of the Portuguese, who had a settlement here, if not of more ancient date.

¹⁶¹ Lieutenant Porter's Memoir.

¹⁶² Hamilton mentions this decline in his time.

some consequence to navigators ; and induce a probability that conveniences were not less attainable here in former ages than at present. Good water is a commodity specified in the journal, which adds, that the place was inhabited by fishermen, who were possessed of small and wretched boats, which they managed with a paddle instead of an oar. The expression is characteristic, for Arrian says, it was like digging the water with a spade ; and whoever has seen the New Zealand canoe, in Cook's first voyage, can hardly conceive the idea represented with more precision.

No where have I found more difficulty to render the narrative consistent, than from Mosarna to this place. Mosarna I have fixed by the neighbourhood of Ashtola and Cape Posmee, and Kophas is, I hope, established by means of Ptolemy, and the position he gives to Alambateir ; the distances appear incapable of correction ; on this head I have confessed my inability to obtain the truth, and must hope for indulgence where the means of information are so deficient.

Two islands are noticed by Ptolemy and Marcian in this neighbourhood ; one called Pola, Polla, or Palla, at some distance from the coast, for which I can find nothing equivalent ; and another named Libe, Liba, or Zibe, close to Alambateir ; the latter I conclude to be nothing more than this very peninsula of Guadel before us, which may have been an island ¹⁶³ till connected with the main by the increase of the neck of land, or might be considered as such, like the Pharos of Alexandria.

From Kophas, in the eastern bay of Guadel, the fleet sailed early ¹⁶⁴ in the evening, and, after a course of fifty miles, reached

¹⁶³ Seen possibly as an island at sea, from the lowness of the coast.

¹⁶⁴ About the first watch ; six o'clock. This is the third instance of weighing at night.

Kyiza, which, by the distance specified, ought to be the Noa Point of Lieutenant Porter, forming the entrance of Guttar Bay from the eastward: but if we are to suppose that the eight hundred stadia, mentioned for this day's work, exceed as much as those of former days, we must place Kyiza¹⁶⁵ on the coast somewhat short of Noa Point; and for this there is a sufficient reason from the next day's course of four hundred stadia, which would be evidently too much for the termination we must allot. Marcian (if his numbers are of any value) places Kyiza at fifty¹⁶⁶ miles from Alambateir, or Cape Guadel.

A plan of Guttar Bay is given in the general Chart, No. I, and will, by the allowance here made, answer in position to the transactions which are to take place on the following day.

At Kyiza the men could not land, as it was an open shore with a great surf¹⁶⁷; they therefore took their meal¹⁶⁸ on board at anchor, and then weighing, proceeded upwards of thirty miles to a small city placed on an eminence, at no great distance from the shore.

This nameless city is not without features to distinguish it; for Lieutenant Porter says, though the land round the bay is so low, that you can neither see the other side nor the bottom of the bay, from Noa Point; yet there is a hummock or two visible which appear like islands, and one of these hummocks we may assume for the eminence¹⁶⁹ of Arrian upon which this city was situated. "We

KYIZA.
Dec. 8.
Sixty-eighth
day.
Allowed.
KYEZA.
Ptolemy.
Twenty-
third station.

A SMALL
CITY.
Dec. 9.
Sixty-ninth
day.
Twenty-
fourth
station.

¹⁶⁵ See the Table, where it is assumed that Nearchus reckons, between Kyiza and Talmena, from the extreme points of each bay; that is, from the eastern point of Guttar Bay to the western point of Churbar.

Kuidsa, or Knisda, as this word would be written in Greek letters, approaches very near to Khudar; the Oriental orthography according to Otter, vol. ii. p. 409.

¹⁶⁶ At eight stadia to a mile, Marcian's numbers agree with Arrian's. Fifty miles.

¹⁶⁷ ῥαχίς. If there was a surf, it is an additional reason for placing Kyiza previous to Noa Point.

¹⁶⁸ ἰδαιπνοποιέοντο, is not precise enough to specify an evening meal, but is apparently so.

¹⁶⁹ γηλόφω.

"found,"

"found," says Lieutenant Porter, "*a small town* at the bottom of the bay, inhabited by fishermen." Is it not a whimsical coincidence, that at the distance of two thousand years, an English navigator should find a town without a name, as well as Nearchus? I do not build upon this; nor do I assert, that the town I am looking for stands where the present town does; this is doubtless Guttar; but I can place Nearchus's town any where in the bay that the position of a hummock will justify, and I rather suppose on the western side, as Lieutenant Porter appears to have viewed the hummocks as he entered the bay from the east.

When the fleet reached this place, it was totally without bread or grain of any kind; and Nearchus, from the appearance of stubble in the neighbourhood, conceived hopes of a supply if he could find means of obtaining it; but he perceived that he could not take the place by assault; and a siege, the situation he was in, rendered impracticable. He concerted matters, therefore, with Archias, and ordered him to make a feint of preparing the fleet to sail, while he himself with a single vessel, pretending to be left behind, approached the town in a friendly manner, and was received hospitably by the inhabitants. They came out to receive him upon his landing, and presented him with baked fish, (the first instance of cookery he had yet seen on the coast,) accompanied with cakes¹⁷⁰ and dates¹⁷¹. These he accepted with proper acknowledgments, and informed them he wished for permission to see the town: this request was granted without suspicion; but no sooner had he entered, than he ordered two of his archers to take post at the gate, and then mount-

¹⁷⁰ πίμματα ὀλίγα.

¹⁷¹ This does not specify the season of the ripe fruit. They might be dried. I do not

speak from authority, but I think the date is gathered in April or May.

ing the wall contiguous, with two more and his interpreter, he made the signal for Archias, who was now under weigh, to advance. The natives instantly ran to their arms; but Nearchus, having taken an advantageous position, made a momentary defence till Archias was close at the gate; ordering his interpreter to proclaim at the same time, that if they wished their city to be preserved from pillage, they must deliver up their corn, and all the provisions which the place afforded. These terms were not rejected, for the gate was open, and Archias ready to enter; he took charge of this post immediately with the force which attended him, and Nearchus sent proper officers to examine such stores as were in the place, promising the inhabitants that, if they acted ingenuously, they should suffer no other injury. Their stores were immediately produced, consisting of a kind of meal¹⁷¹ or paste made of fish, in great plenty, with a small quantity of wheat and barley. This, however insufficient for his wants, Nearchus received, and, abstaining from farther oppression, returned on board with his supply. The fleet hauled off to a cape in the neighbourhood called Bageia, and there anchored at no great distance, as I conclude¹⁷², from the town.

The circumstance of a cape here determines, in my opinion, the correspondence of all particulars relating to this place; for this cape must be the western point of Guttar Bay, and all the circumstances unite in giving a position to this nameless town on the western side of the bay, as I have done.

¹⁷¹ This is not more extraordinary than that cattle should eat fish, as mentioned above; or than the Caviar of the Wolga. Lieutenant Porter reports, p. 13, that at Mascat in Arabia they make a mixture of fish and dates with a kind of earth and water, which the cattle eat as their common food, and it is extremely fattening.
See infra.
¹⁷² No distance is mentioned, and it appears like immediate anchoring, after leaving the town.

BAGEIA.
PROM.
Twenty-fifth
station.

Lieutenant Porter writes, "The bay"¹⁷³ is large and deep, with shoal water, and in crossing right over from Noa Point, a lump is seen on the opposite shore, with an island nearly under it, and a little bay called Bucker Bundar"¹⁷⁴, where the natives fish, and where the Sanganian pirates often lie in wait for the small vessels that trade along the coast." To this lump I had looked for the eminence on which the town stood, but it is inland, and stands on the high ground behind. I have little doubt, however, that this lump directed Nearchus as the first point seen across the bay, and led him to the town itself. And if it is thought extraordinary that he does not mention a bay here, it is not more so than his omission of Cape Guadel, and it ought to be observed, that when he calls Bageia a cape, a cape necessarily implies an indenture on one side or the other.

From these various deductions I consider this nameless town and Guttar Bay as identified"¹⁷⁵, and I now return to attend the fleet on its progress.

But before I enter upon the remainder of the course from Bageia to Badis, it is necessary to take a general view of the coast, in order to dispose of the intermediate stations which Nearchus, from the distress of the fleet, had little opportunity of describing; and on which, consequently, the scantiness of the journal leaves great ob-

¹⁷³ Memoir, p. 7.

¹⁷⁴ A relation may be suspected between Bucker and Bageia, Buckah.

¹⁷⁵ There can be no possibility of error, unless it should be thought worth while to pay attention to the stadia of Marcian. He reckons twenty-five miles from Alambateir to Kyiza, and sixteen from Kyiza to Kafra, *i. e.* Bageia.

This would make Bageia and Noa Point the same; and place the nameless town of Arrian eastward of Noa Point. Even upon this supposition, there can be no greater error than the breadth of the bay; and the numbers of Marcian are too disputable to ground this alteration upon them.

scurity. Kophas, Alambateir, Kyiza, and Bageia, corresponding in the three authors, conduct us safely to this point; and thus far there can be no error, unless I have assumed Bageia for the western point of Guttar Bay instead of the eastern: but the reasons already given are more than sufficient for the occasion.

I am now to take the departure of the fleet from this station of Bageia, and the first step to Talmena is the greatest difficulty; for the distance given by the journal between Bageia and Talmena is a thousand stadia, or sixty-three miles, an estimate which carries Talmena beyond Churbar Bay, and which, if a remedy is sought by commencing the course from Noa Point, encroaches as much on the previous measures as the contrary supposition does upon the subsequent part of the coast. I had, however, originally fixed Talmena at Churbar, Kanafida at the Tanka, Kanaté at Kalat, Troësi at a creek, and Dagafira at a headland previous to Muckfa¹⁷⁶; but by means of fresh information collected from Otter, I have been induced to alter this arrangement, and abandon the measures of the journal. The following discussion I submit, with some degree of hesitation, to such as may be disposed to examine a question which, though not important, has at least research and novelty to recommend it.

The three¹⁷⁷ following stations in Arrian are Talmena, Kanafida, and Kanaté; and in the series of Ptolemy there is a Kandriakes, answering to Talmena; if, therefore, we assume Kandriakes for Talmena, we obtain three successive names, of which Kan is the initial component part. Now it appears from Otter, that the

¹⁷⁶ The Chart, No. I. will give all these positions. one is placed between Kanafida and Kanaté, which is possibly the modern Godeim.

¹⁷⁷ There are four in reality, for a nameless

Oriental accounts which specify the rivers of the Mekran, employ the adjunct Kienk or Kenk, as the Persians use Ab¹⁷⁸ or Roud, to express a river; thus we have Kiourkienk, Nehenk, and Kiechenk¹⁷⁹, all of which d'Anville has adopted in his map¹⁸⁰ of Mekran, and given them the course assigned by Otter. The same term is found in Sufiana, for Cheref-eddin¹⁸¹ mentions a Hoo-chenk and a Dou-danke crossed by Timour in the neighbourhood of Sufa, the position of which will be ascertained in its proper place: but this term takes two different appearances in its derivation from the original form, Dsjenk passing, by one process, from Sj into Chienk, Kienk, Kenk, Ken, Kende, and Kande; and, by another, from D into Dienk, Denk, and Danke. In its first form, it is connected possibly with Tchen, Chen, the root of the Chen-ab or Akesines; with the Ganga, the Ganges, the Kishen-Gonga, the Sevi-Gonga of India; and with the Gihon of Sogdiana: in its second, Denk furnishes the Dou-Danké of Sufiana, and the Samy-Daké of Ptolemy, which is the Danké or Tanka¹⁸² river of the modern charts on this coast. This term, in one or other of these shapes, appears the most ancient¹⁸³ expression for a river of any that occurs; and it may be easily shewn that Ptolemy knew of its various orthography and its meaning; for he writes both Samy-Daké and Samy-Kadé, and he interprets Kand-riakes by Hudr-iakes, evidently from ὕδωρ, the Greek term for WATER. Upon consulting Otter, I find a stream

¹⁷⁸ Ab-Schirin, Ab-Argoun, Roud-chiour.

¹⁸¹ See *infra* in Sufiana.

¹⁷⁹ Chienk, Chenk, pass into Kienk, Kenk, by an Oriental variation, as Kirbe, Girbe, Jirbe, the skin for water used in caravans, and Chienk, Jienk, into Dienk, Denk, by the same analogy as Jumna into Diamuna.

¹⁸² Written Tanqua by Reffende. Portug. and Tanqua Banqua, the white river.

¹⁸³ If it be really connected with Gihon, as I suppose, it is as old as the book of Genesis.

¹⁸⁰ *Asie première partie.*

in this neighbourhood called Kié-Chek¹⁸⁴, which may be interpreted the river of Kié or Guié, an inland town at some distance¹⁸⁵ from the coast, and I cannot help thinking that Ptolemy's Kandriakes is a transposition of the same word Kande-Kié, or Kandre-Kié, for Kié-Kande. Otter says, this river falls into the sea between Khudar and Pichin. Pichin¹⁸⁶ is not discoverable, but Khudar is Guttar Bay, which the fleet has now just left, and if Pichin is to the westward, we have the mouth of this river falling into the sea between Guttar and Churbar, corresponding with the Kandriakes of Ptolemy. If it were now possible to identify the Talmena of Arrian with this Kandriakes, the journal would be clear; but Talmena has no allusion to a river; it signifies a ruined¹⁸⁷ fort, and that is an object which might occur in one part of the coast as well as another. What remains, then, but to consider the series of both authors, and examine how far they correspond?

Ptolemy.

Bageia,
Kandriakes,
Tyfa,
Samy-Kadé.

Arrian.

Bageia,
Talmena,
Kana-fida,
Kan-até.

¹⁸⁴ It is true that Otter considers Kié-Chek as a fort; and yet he writes, *Le Kiour-Kienk recoit aussi l'eau de Kié-Chek*. Chek is Chenk, or Kienk.

¹⁸⁵ Five days or a week; one hundred or one hundred and twenty miles.

¹⁸⁶ D'Anville gives Pichin a situation such as is required; but I apprehend has only Otter's authority; for I do not find Pichin in Al Edrisi.

¹⁸⁷ Mina, Minau, at the Anamis, and Minavi, at Basra, are expressive of a fort. Tal

is, in Hebrew, a ruinous heap; and from hence, perhaps, Arabic or Persic. That such ruins were as common on the coast formerly as at present, there can be little doubt; for the Belootches from the eastward, and the native Gadrosians are both tribes of plunderers. The very next station at Kanafida is noted by the journal as a *ruined city*. Thus has rapine joined with avidity to desolate this coast in all ages. See Parkhurst in voce חלה; and מען an inhabited place; but the last is dubious.

This

This is their order, and if the first agrees with the first, and the two last can be discovered to correspond mutually, the second may be considered as the unknown quantity we are searching for. Permit me, then, to read Kana-Difa¹⁸⁸ for Kana-Sida; and I find Kienk-Difa, the river of Dis, Tiz, or Tidsj. This is the Tyfa of Ptolemy, the Tefa or Teifa of Marcian, the Teiz of Dalrymple, and the Tearfa of Porter. All these different modes of writing are expressive of a town situated in the bay of Churbar, celebrated by Al Edrifi¹⁸⁹ for its commerce with Keish, an island in the Gulph, and Oman in Arabia, both sufficiently noticed by Cheref-eddin and other Oriental geographers. Otter brings the Kiour-Kienk, or salt river¹⁹⁰, into this bay; and unless Sida shall be found to express *salt*, there can be little doubt but that it is a transposition from Difa or Diz. By a similar process the modern Tanka may be found in the Kanaté of Arrian, and the Samy-Kadé of Ptolemy; for Kanat and Kade come by one method from Kienk and Samy-Daké, Danke and Tanka by another: if, therefore, upon these grounds Kana-Sida corresponds with Tiz or Churbar, and Kanaté with Samy-Kadé or Tanka, Talmenā consequently answers to the Kandriakes of Ptolemy, and the series in both authors is consistent. It is not necessary to insist on this reasoning as indisputable; but if we find the initial Kan thrice repeated in succession, and three rivers locally agreeing with this, and still preserving the traces of the adjunct, it is some light gained in a region of obscurity, and may lead to the just distribution of the stations on the coast, if it should ever be visited

¹⁸⁸ The licence requested for these transpositions is stated fully hereafter at Agris.

¹⁸⁹ P. 58. Taiz; a small but populous city. Est urbs parva, celebris tamen et popularis.

¹⁹⁰ Roud-Chiour the salt river, near Kunk in Loristan; and Kunk itself is related to Kienk. In those countries where the soil is salt or nitrous, there are salt rivers every where. See Marco Polo Ramusio, tom. ii. p. 8.

again. More rivers than these three¹⁹¹ I cannot distinguish in Otter¹⁹²; for his Kiourkies and Souringuour are only the same, or parts of the same stream, Kiour-Kienk; and what their course may be inland is of no consideration to the journal. Otter's authorities, in this respect, are much embarrassed; and I am not without suspicion that he has mistaken Kié for the capital instead of Kidge: I once thought them both the same; but Al Edrisi writes¹⁹³ Kia and Kir as distinct places, and Kir he seems to estimate as the principal city; if so, he writes Kir for Kirge, and Kirge is Kidge. All the geography I am acquainted with makes Kidge the capital of the province, called from hence Kidge or Kutch Mekran in the Ayeen Akbari; and Kedge, Gedge, or Gedrosia, by the ancient historians: for Mekran is the country related to the Mehran or Indus; and Kutch Mekran implies the western side of the Indus towards Kutch or Kidge. This is a point, indeed, not necessary to discuss, as it is not connected with the voyage; neither is it insisted on farther than as the suspicion of a mistake. Otter has made a similar lapse in regard to Ahwaz in Susiana, and this gives an additional reason for supposing that he may, in this province also, have been misled by the fluctuation of Oriental orthography.

Having now obtained a probable solution of these difficulties, and found three rivers which may afford the means of reconciling Arrian with Ptolemy, and both with modern geography, it remains to conduct the fleet along the coast to the three following stations of Tal-

¹⁹¹ There is a fourth, Makehid, to the west; of which see *infra*.

¹⁹² Otter, tom. i. p. 408.

¹⁹³ Nub. Geog. p. 56.

mena,

mena, Kanafida, and Kanaté, with a fourth between the two last, which is nameless, and without any distance specified!

—
TALMENA.
Dec. 10.
Seventieth
day.
Twenty-sixth
station.
KANDRI-
AKES and
HUDRI-
AKES of
Ptolemy.
—

The fleet weighed from Bageia at midnight ¹⁹⁴, and proceeded a thousand stadia, sixty-two miles and an half to Talmena. This distance, if taken from Noa Point, is not greatly in excess, but this assumption the transactions recorded do not authorise; and there is reason to apprehend that the error of numbers lies somewhere about Guttar Bay, or Kuiza. Whatever it may be, the sinking of it here relieves the remainder of the course to Badis; and we might build something on the four hundred stadia of Marcian to diminish the excess, if we could find their proportion with other stations; that, unfortunately, is impossible. No circumstances relating to Talmena are recorded in the journal, but that it was a safe harbour; and this, at least, has nothing discordant with the station allotted to it at the mouth of Ptolemy's Kandriakes, the Kié-Kenk (Kié river) of Oriental geography. Nothing in Otter's account forbids the issue of this stream to be fixed between Guttar and Churbar Bay, and nearer to the latter than the former. We must not pass this place, however, without observing that Hudrakes, the pilot of Nearchus, seems to derive his name from this Hudriakes. It is said expressly that he was a Gadrosian; and if we are right in assuming this stream for the river of Kidge, it is a native of Kidge who is now on board. May we not lament that the brief narrative of the journal has suppressed this circumstance? Or will it afford ground for an argument, that the silence of the journal upon this head furnishes matter against the arrangement? Either way, this must be left to its fate, that we may return to the prosecution of the voyage.

¹⁹⁴ Again at night.

From Talmena, the distance to Kanasida is estimated at twenty-five miles, a space not greatly in excess; and Kana-Disa has been interpreted the river at Tiz or Tidsj, which Otter calls the Kiour-Kienk, or salt river. The remembrance of the town still exists in the bay of Churbar, and the cape at the entrance is still called Tiz-mee, by the same analogy as Cape Passence or Possem¹⁹⁵ is styled Pos-mee: is it not remarkable that two navigators, at the distance of so many centuries as Nearchus and Commodore Robinson, should find the same place in ruins? Nearchus does not mention a river here, and probably did not advance far enough into the bay to see it; but they found a well ready dug, which saved the trouble of opening the sands, and the wild palm tree, from which they took the tender shoots¹⁹⁶ of the head to support life; so that the little supply of corn they had procured at Guttar Bay could have relieved only a momentary want. The plan of this bay, with its double curve, is given in the Chart, No. I. and I am disappointed in finding no river marked here by our English navigators, in which they agree too well with Nearchus. My authority for bringing the salt river into this bay is Otter, whom d'Anville interprets agreeably to my supposition: but proof is still wanting, and the initial Kana is the only evidence Nearchus affords that the stream exists in this place.

KANASIDA,
or
KANA-DISA.
Dec. 11.
Seventy-first
day.
Twenty-
seventh
station.
TYZA of
Ptolemy.

¹⁹⁵ Passaum. Portug.

¹⁹⁶ Strabo mentions, p. 722, that the army of Alexander, in passing the desert of Gaddusia, was preserved from famine by the same means. ἀπὸ δὲ τῶν φαίλων ἢ ἡ σωτηρία, τῷ τε καρπῷ καὶ τῷ ἐγκέφαλῳ. According to the translation, Fructus et cerebrum saluti fuerunt. So Xenophon, Anab. lib. ii. c. 3. seems to use ἐγκέφαλος for a part of the fruit: but I think in this passage of Arrian, τῷ τε καρπῷ καὶ τῷ ἐγκέφαλῳ

κόπτοντες, seems to imply cutting the tender head of the plant, rather than the fruit; for fruit at this season there could be none, though I must recall the conjecture in note 171; for I now find the date is an autumn fruit, and specified as ripe in October by Cosmas Indicopl. Tab. p. 338. Montfauc. N. Coll. Patrum. Strabo mentions the preserved date: Οἱ Γεδρωνοὶ φυλάττουσι τὸν ἐνάρσιον καρπὸν ἐς ἔτη πλείω ταμινύμενοι. P. 726.

At the time Churbar was visited by Commodore Robinson's little squadron, the natives were desirous of the English settling at Tiz, where they shewed him the ruins of a Portuguese fort, and informed him that Churbar had been a place of considerable trade in ghee ¹⁹⁷, silk, twiled cotton, and shawls, till a six years' drought had reduced the land to a desert ¹⁹⁸. Water, however, was easily procured here, and good; with sheep, goats, and vegetables. Their horses also were of a fine breed; and while the English lay in the bay, there were two vessels in the harbour sent by Hyder Ali to take advantage of the market depressed by the drought, and to seek a supply for his cavalry even in this desert region of the Mekran. Such was the attention of that extraordinary man, whose spirit soared as high as Alexander's, and whose conquests might have been as rapid, if, like Alexander, he had met with no opposition but from the native powers of India. The inhabitants of Churbar informed the English, that there was a large and extensive city properly walled round, about a week's journey from the coast. This intelligence agrees well with Otter's site of Kie ¹⁹⁹, and argues something for the river supposed to fall in here, or in the neighbourhood; for in this tract there can hardly be a city unless where there is a river to supply it.

From Kanafida, Nearchus proceeded four-and-twenty hours without intermission to a desert coast, where he was obliged to anchor at some distance from the shore, as the distress of the people was now risen to such a height, that, if he had suffered them to land, he had

¹⁹⁷ Half liquid butter.

¹⁹⁸ Lieutenant Porter, p. 8.

¹⁹⁹ I am more persuaded that it is the same, by Al Edrifi's giving five days distance from

Tiz to Kir, agreeing sufficiently with the week's journey of Porter. Nub. Geog. p. 58.

reason to suspect that they would not have returned on board. This desert shore has neither name or distance, and the day and night allotted to the course, as well as the number of stadia given to Kanaté, the following station, apparently comprehend both the space and time to that place. A day, however, will be allowed here in conformity to the usage I have adopted, but the measure will be carried to Kanaté. The point I would assume for this anchorage is Godeim, at the western extremity of the second curve in Churbar Bay. Godeim²⁰⁰ is a headland very level along the top, with steep cliffs next the sea; from whence Cœlat or Kalat is seen, which is a remarkable object, and somewhat short of which is the mouth of the Tanka Creek. It is observable, that headlands of this kind frequently attract the fleet to an anchorage; but whether for the purpose of surveying the coast before doubling them, or any other reason, does not appear.

—
A DESERT
SHORE.
Dec. 12.
Seventy-
second day.
Twenty-
eighth
station.
—

This stream, therefore, naturally corresponds with the Kanaté of the journal; and if Kalat had been at the Tanka, Kanat-é might have been thought not unconnected with it. Seven hundred and fifty stadia, or forty-seven miles, answer almost exactly from the eastern point of Churbar Bay [Kanasida] to the Tanka; and as there is nothing in Arrian to forbid the application of this measure to the two days' course, I shall consider this as a station ascertained. It has already been shewn how the Kanaté of Arrian and the Kadé of Ptolemy are allied, as well as the connection of both with Daké, the Danké or Tanka at this place. This connection is verified by the copies of Ptolemy giving Daké²⁰¹ or Kadé indifferently, which

—
KANATE.
Dec. 13.
Seventy-
third day.
Twenty-
ninth station.
—

²⁰⁰ Lieutenant Porter, p. 9. He says, *terp. Samy-daké, Samy daka. Samy-dokhes* Godeim looks like an island till you are near river, *interp. Samy-dakhia.* And so Hudson it; and d'Anville has an island here. May *Marciani Perip. p. 22. Samy-daké, Samy-* not this be the Pola of Ptolemy? *kadé, Samy-dokhes, noting the fluctuation of*

²⁰¹ Ptolemy, p. 157. *Samy-kadé, in-* Ptolemy.

is not a various reading, but derived from the fluctuation of Oriental orthography. Whether this will be admitted as proof of the identity I cannot say, but such it appears to me; and on a coast involved in so much obscurity, every approximation to probability is clear gain.

The journal assigns no attributes to Kanaté but that of an open shore, with the mention of some shallow watercourses, intended possibly for the purposes of agriculture, and the bettering of an arid soil. Porter calls the Tanka a small river, and the artificial cuts²⁰² of Arrian bespeak a river also; for on this coast, wherever there is not a river, no such circumstance could occur. It would be well if this stream could be identified with any of those specified by Otter; the Nehenk is the one I looked to, but he carries that far to the eastward, and so is he interpreted by d'Anville: his Kiour-kies is that nearest the site of the Tanka, but he joins the Kiour-kies with the Kiour-kienk, and brings them united to Tiz. There is reason to suspect that both are the same; for Kiour-kienk is the salt river, and Kiour-kies is the salt [river] of Kié. We must abandon, therefore, the inland course of these streams for want of information, and content ourselves with the issues we find upon the coast. The mouth of the Tanka in this place is indisputable; for it is the Tanka-Banka²⁰³ of Reffende; and the Portuguese had a fort about three miles up the stream, the ruins of which, with a Bazar and wells, were reported to Lieutenant Porter when he was on the spot with Commodore Robinson²⁰⁴. To this river a long course inland is assigned by de la Rochette, on what authority I know not; but it can hardly rise beyond the mountains, as he makes it, if we may judge by the size and shallowness of its mouth.

²⁰² Artificial cuts; διέγχεσις βαρχειται. Arrian, p. 343.

²⁰³ White River? from Bianca Ital. Portug.

²⁰⁴ Lieutenant Porter, p. 9.

It does not appear by the journal that the people were suffered to land at Kanaté; neither is there any mention made of a supply²⁰⁵ being procured. A sufficient reason for concluding, that the course was hurried on faster than the time I have allotted, and for which due allowance will be made.

Upon this ground I assign another day for the passage to Træsi; the course made good was fifty miles; and here, at last, a scanty supply of provisions was obtained. The place presented several mean and wretched villages, deserted by the inhabitants upon the approach of the fleet; but a small quantity of corn was found, with some dried²⁰⁶ dates, and these, with the flesh of seven camels which the natives had not carried off upon their flight, afforded a repast, of which perhaps nothing but the utter distress of the people could have induced them to partake. Whether the Greeks had any particular aversion to camel's flesh, more than what is common to all mankind, who nauseate what they are not used to consider as food, I have not discovered; but it is evident that Nearchus means to give this instance of famine in the extreme, such as we at present understand by the eating of horse-flesh in a besieged town: I feel indeed some concern for the friends with whom I have so long failed, that I do not hear of their feasting on the turtle with which this coast abounds. Porter mentions the turtle in great abundance at Ashtola; and Marcian fixes a tribe of Khelonophagi, or turtle-eaters, in the neighbourhood of the spot, where the fleet now is: but the Greeks seem to have considered men reduced to live

—
TROIS.
TROIS.
Dec. 14.
Seventy-
fourth day.
Thirtieth
station.
—

²⁰⁵ All bread-food was certainly exhausted. If any thing was on board to support life, it could only be the fish-paste procured near Kyiza.

²⁰⁶ Βαλάνοις ἐκ φοινίκων. The copiousness of the Greek language did not supply a term for this fruit. It is literally the acorn of the palm.

wholly

wholly upon fish, turtle, or camels, as stamped with barbarism; and the terms expressive of these tribes are used always as indications of contempt or aversion.

I do not here mean to draw a conclusion, but I cannot help noticing it as a remarkable coincidence, that Nearchus should find a supply of dates at this station, and that Porter should say²⁰⁷, "Between the Tanka and Muckfa, we found the land bear a better face than any we had hitherto seen, as the vallies in most places were full of date trees." If this does not apply to the spot, it is at least descriptive of the coast.

What the name of this station is, or where it is situated, is no easy matter to determine; for Arrian's usage of the word leads properly to no distinction of it in a Greek form. He writes Troisin, which, if plural, leaves great room to doubt of its origin; and Gronovius is disposed to read Taoi. In point of order, it corresponds with the Pasis of Marcian, which Ptolemy writes Masis, Magis, Magida, and Mazinda; and which Marcian seems to fix at a river²⁰⁸ called Sarus and Salarus: but this does not admit of proof, for Ptolemy's Magis is five-and-thirty miles to the eastward of his Sarus. This is of some consequence to note, because by these means I may take his Magis previous to the cape which I assume for Dagafira; and carry his Sarus westward to a creek marked in Commodore Robinson's chart, which answers to the Iskim of d'Anville²⁰⁹, de la Rochette, and Reffende²¹⁰. So far Nearchus corresponds with Ptolemy's position of Magis, that he intimates no river at Troesi.

²⁰⁷ Memoir, p. 9.

²⁰⁸ The reason for asserting this is, that Marcian gives no distance between Pasis and the Salarus.

²⁰⁹ It is very ill defined in all.

²¹⁰ Reffende writes Isqui. Isk, Elk, and Usk are names of rivers in our own country, and all signify water.

Upon finding Makichid mentioned as the name of a river in Mekran, by Otter, I thought I had discovered the clue; for the corruption or fluctuation of the text in the three authors would have justified any reading in Arrian: but if Otter's disposition of the Makichid is just, it is far to the eastward, and can have no relation to the Magida of Ptolemy.

Out of the uncertainty caused by these various authorities, I can extricate myself only by adhering to the measures of Arrian, which, with allowance for the excess attending the whole of this coast, enable me to place Trœsi short of the cape which succeeds first westward of the Tanka, and to fix on that cape for the Dagasira of Arrian. The reason for this will be assigned hereafter; but I shall first conduct the fleet to Badis, and then take a review of the coast.

From Trœsi to Dagasira the course was short of nineteen miles. The fleet failed at day-break²¹¹; and as this is the first instance since Hydrakes was on board, it may not be improper to observe, that if we fix the hour between six and seven in the morning, the land breeze would hold good for an hour or more to secure an offing. The shortness of the course was determined either by this circumstance, or by another which occurs frequently, the appearance of a cape. This, indeed, is not noticed by Arrian; but Dah-Gesira²¹²

DAGASIRA.
Dec. 15.
Seventy-fifth
day.
Thirty-first
station.

²¹¹ ὑπὸ τῆς ἡμέρας. Sub aurora, before the sun rose.

On all other occasions from Mosarna, sailing in the night is mentioned, or the time is omitted altogether.

²¹² In all etymology, I speak, subject to the correction of those who understand the language, or have been upon the coast: but I have before suggested that Dahh or Dahr might signify a *bead*, and Bah or Bahr, in contradistinction, the interior part, or *bay*. I shall now add that Bahr signifies a *sea*, as Bahr-ein the *two seas*; Bahr Nedsjef, the dry *sea* or *lake* at Meschid Ali. Niebuhr: but I ought not

to omit that another sense of Bar occurs in Montfaucon's Preface to Cosmas Indicopleustes, where he says it signifies a *continent*, as in Zangue-bar, Mala-bar, &c. In this sense, Bar-Gazira is literally Χερσόνησος, a Chersonese, such as Guzerat and Arraba and Guadel are. This, though contrary to my own hypothesis, I think it right to state. Perhaps if not the true etymology, it may lead to the discovery of truth. See Montfaucon N. Collectio Pat. Præfat. ix. Cosmas, p. 132.

expresses

expresses the head of a peninsula or promontory, and there are two capes between the Tanka and Muckfa. From the distance between Dagasira and Badis, I prefer that which is the more eastern. One circumstance only is noticed here, that of meeting with a few straggling natives, from whom it does not appear that any assistance was obtained. Unimportant as this may appear, it preserves a picture of the coast; and the habits of the natives are the same at the distance of twenty centuries. "Every where along the coast," says Porter, "there is a family here and there which keeps a few goats and camels, and subsists upon their milk"²¹³. And again, at Muckfa, he adds, "A few miserable people live on this desolate place on the shell-fish they pick up at low water, without any grain or dates, unless at the time of year they are in season." Such were the wretched inhabitants Nearchus found here; and Gronovius is almost angry that he honours them with the title of Nomades (herdsmen wandering in search of pasture); he insists upon it, that they are mere vagabonds; but Porter's camels and goats seem to justify a better sense of the expression. In one view, their misery seems rather upon the increase; for if they are not provident enough to preserve the date, they are sunk below the condition of their ancestors. Strabo mentions the fruit in its dry state, and Nearchus evidently procured dried fruit at Træsi. The inhabitants are called Brodies by Porter; but Niebuhr considers them all as Belootches, quite to Jask²¹⁴, and connects them with the Arabs on the opposite side of the gulph. If this connection could be established, it would not be impossible to extend it through the whole Mekran, and to unite the Arabitæ on the Arabis, with the

²¹³ Porter, p. 8.

²¹⁴ There is a prince of Jask whose romantic history makes a figure in the reign of

Abbas the Second. Niebuhr says he was a Balludsj. See Tavernier.

Arabs of Oman²¹⁵. Neither is it unreasonable to suppose that the Arabic names on the coast are a proof of this; for as the Arabs were the earliest navigators of the Indian ocean, so were they better qualified to bear the hardships of the desert than any other nation; and if a life of rapine is characteristic of the Arabians, the Arabitæ or Belootches, in this respect, have in all ages maintained a perfect claim to consanguinity.

The distress of the people, and the impossibility of procuring a supply at Dagasira, urged a hasty departure of the fleet. They sailed in the evening, and continuing their course all that night and the following day without intermission, they reached, after a stretch of almost sixty-nine miles, a promontory projecting far out into the sea, with a surf beating upon it to a great extent. This they did not dare to approach, or to double the cape while it was dark. They rode at anchor consequently during the night, as near shore as the surf would permit, and the following morning got round into a bay, where they found the town of Badis, and where they were at last relieved from the miseries they had experienced on this desolate coast. This promontory is the boundary between the country of the Ichthyophagi and Karmania; and at Badis they found corn, vines, and fruit-trees of every kind except the olive, a town inhabited, and the inhabitants ready to relieve their wants.

BADIS.
Two days.
Dec. 17.
Seventy-
seventh day.
Thirty-third
station.

²¹⁵ There is an Ommana, mentioned by Ptolemy and Marcian, to the westward of Pafis, (see the Table, p. 220.) and placed, by the author of the Periplus, six days' sail east from the gulph of Persia. (See Peripl. Maris Erythræi, p. 20. Hudson Geog. Minores.) The author mentions the connection of this Ommana with Kana in Arabia, and Barygaza in India, as a kind of central emporium. The place probably did not exist in the time of

Nearchus, but seems to owe its rise to the extension of the Arabian commerce towards the east. The name intimates that it was a colony of Arabians from Oman, the immediate province on the west of the gulph, always celebrated for its commercial spirit, and containing Muscat, still the greatest Arabian mart on the ocean, which is the Moscha of the Periplus. See Niebuhr's map of Oman.

And now having conducted my friends into a place of safety, I must return to survey the coast. The first point necessary to fix is Badis. Badis I place at the cape called Muckfa by Robinson and Porter, and which will presently appear to be the real Jask. The name is written Kan-Theatis, Kan-Thapis, Kan-Eatis, and Kau-Ratis, by Ptolemy and Marcian; and if we prefix Kan to the Badis of Arrian, it bears no little resemblance to every one of these variations. Kau-Ratis²¹⁶, in conformity to the other three, is necessarily Kan-Ratis²¹⁷; and this differs so little in the form of the Greek letters, that there is no violence used in asserting, that Kan-Batis and Kan-Ratis are the same. Now Kan marks a *river*, and Ba-dis, if my conjectures are right, a *bay*: both these circumstances are applicable to the spot, for there is a river five miles within this cape; and at this river I conclude the fleet anchored on the morning of the seventeenth.

The fluctuating orthography of the Greek text will justify still greater liberties than I have taken; and when it is considered how much the native names of every coast vary in modern charts, how difficult it is to write foreign sounds received by the ear, and how seldom two persons express the same sound by the same letters, there will appear no extraordinary licence in the changes adopted upon the present occasion. I never wish to lay more stress on these conjectural criticisms than they deserve; and if this explication had stood alone, I should think it of little weight; but if it shall be found to accord with the nature of the coast, with the best digestion

²¹⁶ *Kauρατιδος*, in Cod. Herv. Hudson. the mistake is natural.
 Marciani Periplus, p. 22. *Κανιατιδος* in the text. I only go a step farther, and read in Mar-

²¹⁷ The difference in Greek letters, between *Kauρατις* and *Κανρατις*, is so evanescent, that KAN-BATIS for KAN-PATIS.

of the measures attainable, and with the general course of the fleet, even those who set little value upon etymology will allow it to contribute its due share to the mass of evidence which may be procured from other quarters.

In order to fix Badis geographically, it is necessary to encroach on the limits of Karmania, and to find in the first place what is the Karpella of Ptolemy; for as d'Anville, by conceiving that Karpella and Badis are the same, has confused the account of the ancient historians, so is it a most extraordinary coincidence, that modern charts and modern navigators have varied equally in fixing the proper site of Cape Jask. It happens, that upon the approach to the gulph of Persia there are two capes about twenty-seven miles asunder; the easternmost of which is the Cape Mucksa of Robinson, Porter, &c. and the westernmost their Cape Jask. Here is the origin of that embarrassment which involves the whole question in obscurity, for in reality Mucksa is the true Jask, and their Jask is Cape Bombareek. It is this Bombareek which is the Karpella of Ptolemy, and consequently when d'Anville brings Badis to this point, he fixes it twenty-seven miles farther to the west than it really is.

I shall settle the ancient geography first; I shall then proceed to consider the mistake of the moderns, and give the reasons for pronouncing it an error with so much confidence as I have done.

Ptolemy's series comes down the gulph of Persia to Karpella. This lays me under the necessity of going still farther out of the province I am treating of; but at the same time it gives me an opportunity of identifying Karpella with Bombareek to a demonstration. Armozon is a cape opposite to Mussendon, on the

Arabian shore, where is the narrowest part of the strait at the entrance of the gulph; between which and Karpella are two remarkable eminences, one called Strongylus, or the Round Mountain, by Ptolemy, near Armozon, and the other Karpella, from which the promontory derives its name. The former of these is the modern Elbourz, which signifies a fire tower of the Parsees; the latter is the Bombareek rock, which communicates its title to Cape Bombareek, as Karpella did of old. It is true that Strongylus is not enumerated in the series, but stands at the foot of the account; its latitude, however, marks its place.

Armozon,	-	-	23° 40' 0".
Strongylus,	-	-	23° 0' 0".
Karpella,	-	-	22° 30' 0".

The inaccuracy ²¹⁸ of these latitudes is of no importance; but let them be true or erroneous, they equally prove that Strongylus is between the two capes: and as there is not a third, Karpella must be Bombareek. The Bombareek rock is in reality six or seven miles north of the cape, and upwards of two miles from the shore; but as the land is low, it makes a conspicuous figure from a *perforation at its top*, and appears, when the land is not seen, like an island ²¹⁹.

Now it is very remarkable that Kar ²²⁰, in Hebrew, signifies a *hole through which the white light appears*; and if I could find the means of ascertaining a similar sense of this word in Arabic, Persian,

²¹⁸ Karpella is really in lat. 25° 42' 30", that Mr. d'Anville has an island here. or 25° 40'.

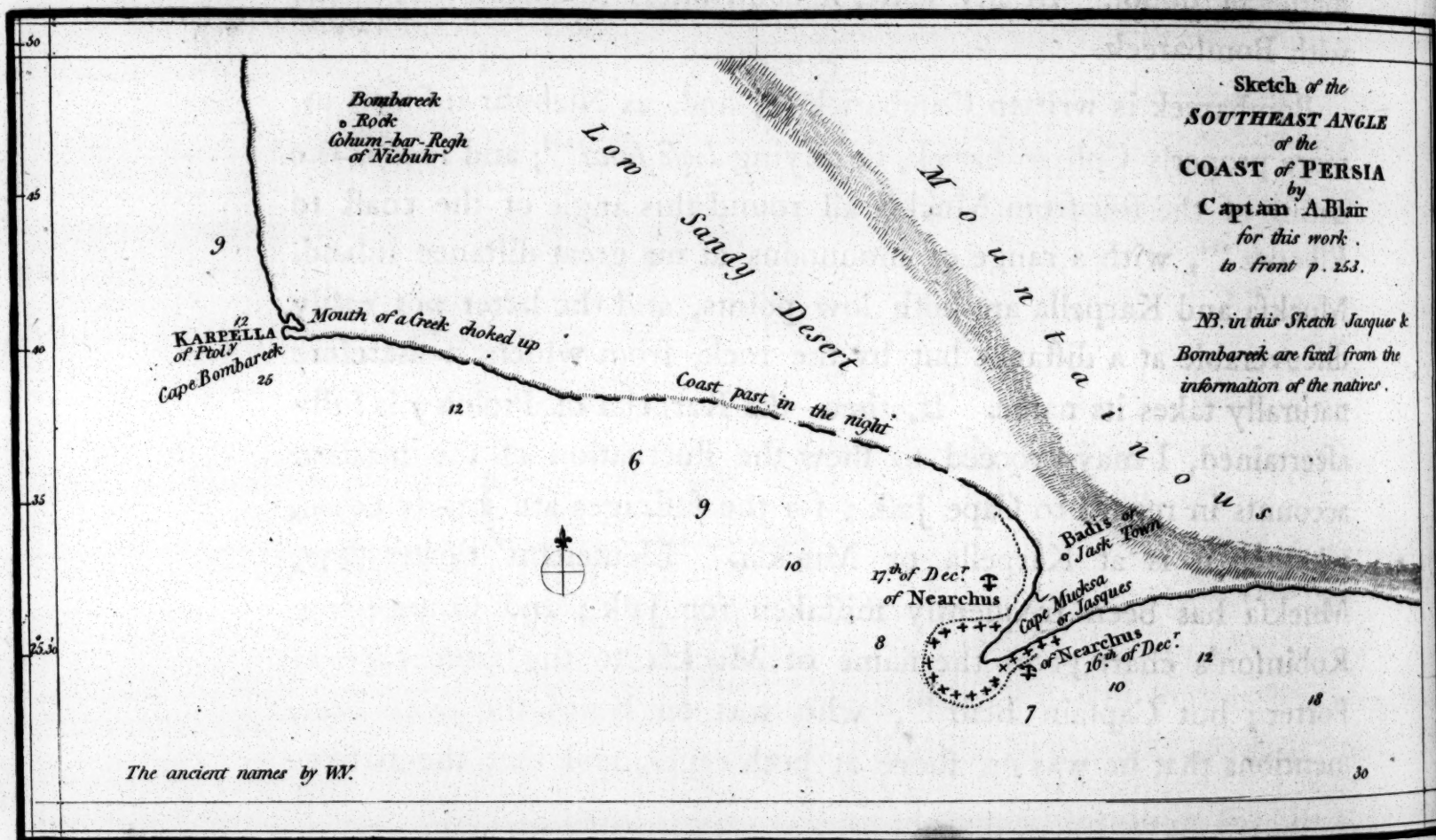
²²⁰ קר, Kar. Also a hole or slit in the lid of a box, for admitting money.

THE
[Faint, illegible text block]



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or Pehlvi, I could shew that Pella might be allied to three²²¹ Hebrew origins, all expressive of division or separation. Whether this idea would be applicable to the cleft of the rock itself, to the termination of the province, or to the division of the two seas, must be left as a matter of doubt. In any sense, it contributes to identify Karpella with Bombareek.

Bombareek is written Combarick²²², and, as Niebuhr informs us, more properly Cohum-barick, signifying *loose sand*²²³; and such is the nature of the soil from Muckfa all round this angle of the coast to Elbourz²²⁴, with a range of mountains at no great distance inland. Muckfa and Karpella are both low points, and the latter not easily discoverable at a distance but by the rock, from which it therefore naturally takes its name. If, then, the Karpella of Ptolemy is fully ascertained, I may proceed to shew the fluctuation of the modern accounts in regard to Cape Jask; for the suffrages are nearly equal, whether it is at Karpella or Muckfa. Lieutenant Porter says, Muckfa has been frequently mistaken for Jask; and Commodore Robinson's chart gives the name of Muckfa to the same cape as Porter; but Captain Blair²²⁵, who was on board the same fleet, mentions that he was on shore at both capes, and that the natives

²²¹ פלא, פלה, Pala, Palah, cut, severed, divided.

²²² פלג, Palag. Applied to the dividing or bounding of countries. See Parkhurst in voce. All have properly Ph.

²²³ Combarrack, Gombarrat, Mumbarack, &c. &c.

²²⁴ Pietro della Vallé writes, *Sable delié*. Rick, or rather Regh, will appear as a component part of Bander-Regh, Regh-ian, &c.

²²⁵ There are several Elbourz in Persia; one particularly at Yezd.

²²⁶ Niebuhr, if I am not mistaken, agrees with Captain Blair; for he says Kohum-bareck is three three-fourths German miles north-west of Jask; but this is not certain; for his text stands, *à Pest vers le nord*. I read, *à l'ouest vers le nord*, because north-east agrees neither with one Jask or the other, tom. i. p. 72.

uniformly

uniformly agreed in calling the eastern cape, Jask, and the western, Bombareek: now what is the name of any place but that which the natives give it? Captain Blair, upon a personal interview, favoured me with a variety of circumstances relating to this coast; and, with a liberality that does credit to the officer and navigator, drew up a sketch of the topography, from materials in his possession collected on the spot, which I have caused to be engraved, and inserted in this work. In this sketch, his Cape Jask is the eastern promontory, and his Bombareek the western; and in this he is supported by Cutler and Pietro della Vallé²²⁶; on whose authority I rely, notwithstanding the evidence on the contrary side is highly respectable.

In the Chart, No. II. is introduced a plan of the bay formed by the eastern cape, from a manuscript of Baffin and Sommerfon preserved in the Bodleian Library, and published by Mr. Dalrymple. In this plan the town of Jask is given, and a river²²⁷ five miles from the cape, near which I suppose Nearchus to have anchored, and upon which the town of Badis possibly stood in that age. This chart, it

²²⁶ Nous doublâmes le cap, qu'ils appellent en Perse Combarick, c'est à dire, *sable délié*, et la nuit suivante nous laissâmes derrière nous, la pointe de Gask. Piet. della Vallé, tom. vi. p. 251.

This language manifestly marks the same Combarick and the same Jask as Captain Blair's; and Pietro della Vallé is the best of evidence, as he was in the neighbourhood of Ormuz during the siege, and makes frequent mention of the English fleet in Jask road.

²²⁷ "To the northward of Cape Jasques comes in a river, distant about five miles. Any vessel, not drawing above ten or eleven

feet, may run into it as a good haven. It is as secure as a wet dock." N. Cutler's coasting pilot in Dalrymple's Collection of Memoirs, p. 83. See, in the same Collection, J. Thornton, p. 69. Both copy a note of John Hatch, master of the Bee, affixed to Baffin's plan. The river is marked in the copy of that Chart engraved in No. II. with the town of Jask to the north. I suppose Nearchus to have anchored near the mouth of the river, and nothing forbids the existence of a town on that stream two thousand years ago.

is true, does not style the eastern cape, Jask; but it calls the bay, Jask Road: the town, however, being close upon it, naturally communicates its name to the bay and cape nearest, rather than to the western point, which is at twenty-seven miles distance. This is the Jask road in which the English fleet lay in the year one thousand six hundred and nineteen, when it came to assist the Persians in the reduction of Ormuz; and, during the north-eastern monsoon, it is as safe as a harbour. All this evidence collected, with the information obtained by Captain Blair on the spot, sets the question so far at rest, that I shall in future call the eastern point regularly Jask or Badis, and the western, Bombareek or Karpella.

The mistake committed by d'Anville, in supposing Karpella and Badis to be the same, is founded upon, and supported by another error; for he read in the translation of Arrian, that there was a rock²²⁸ at this point, and, in order to establish the identity of Badis with Karpella, he went six or eight miles north to fetch the Bombareek rock to the cape. Unfortunately for this system, the Greek text says nothing of a rock, but uses that term²²⁹, which I interpret *surf* or *breakers*, and which, with Gronovius to support me, I can maintain against all the translators. Let the reader refer to Captain Blair's sketch, and he will see breakers to a great extent at Jask, but

²²⁸ Memoir, p. 140.

Il parle d'un rocher escarpé sur cette côte; or la terre du cap est assez basse, mais l'anse qui lui succède est terminée par un rocher blanc, fort pres de terre, escarpé, plat sur le sommet, et qu'on prendroit de loin pour une forteresse; son nom est Bombareca.

In this short account there are four inaccuracies. 1. There is no bay (Anse), but only a creek. 2. The rock is not at the termination of this creek. 3. It is not near the

land (pres de terre), but upon land. 4. Its distance, though not here specified, is made to appear much too near Karpella. Added to these, the principal feature of Bombareek, its perforation, is omitted. All these errors are incurred, to find a rock at the cape, where there is no rock, except in the translation of Vulcanius: for it is Vulcanius qui parle d'un rocher escarpé, and not Arrian.

²²⁹ ῥοχλῆ. See this fully stated above.

none at Bombareek; and when he is assured that these were inserted from this officer's own materials, and not previously concerted to answer my purpose, let him judge for himself concerning the correctness of Arrian, and the exact picture of the coast he gives, as it appears at the present hour.

It will afford no little pleasure to consult the draught, and to compare it with the text of Arrian; to view the right angle at Bombareek, and the acute projection of Jask; to observe Bombareek without breakers, and Jask encircled with them all round, and this to a considerable distance from the point. Afterwards, let us refer to the testimony of Arrian, which is repeated twice, and is contained in the following words: "They anchored," says he, "not close to the shore, but rode in the open sea, upon account of the surf, which was of great extent." A digression then ensues, comprehending an account of the natives, and some general circumstances of the voyage; after which, he resumes the narrative, with particulars of the same tenor. "As soon as the fleet reached the boundary between the coast of the Ichthyophagi and Carmania, they rode at anchor at a distance from the shore because a violent surf²³⁰ beat along the line of the coast, and extended out a

²³⁰ So I render παριτέτατο.

Ὁρμίζονται δὲ εἰς τὴν γῆν ῥηχίν γὰρ ἦν ἐπὶ πολλὸν ἀνέχουσα, ἀλλὰ μετέωροι ἐπ' ἀγκυρέων, p. 344.

Neque vero ad terram appulerunt, erant enim frequentes ad littus scopuli, sed jactis in falo anchoris substituerunt.

Ὡς δὲ εἰς τὴν Καρμανίην ἀπὸ τῶν Ἰχθυοφάγων κατήξει ὁ Στρατὸς, ἐνταῦθα ἵνα πρῶτον τῆς Καρμανίης ὠρμίσαντο, ἐπ' ἀγκυρέων ἰσάλευσαν, ὅτι ῥηχὶν παριτέτατο εἰς τὸ πέρατος τρηχίην, p. 347.

Postquam vero ex Ichthyophagis in Carmaniam perventum est, primum anchoris in falo

jactis constiterunt, quod aspera in mare petra porrecta esset.

This translation of ῥηχίν by scopuli and petra is the very origin of d'Anville's error. He looks for a rock where there is none, till he has brought it from eight miles distance, and then it is not in the sea, but on a sandy plain near three miles from the shore.

I render ῥηχίν, surf; and there can be no error in my construction greater than this. It is either the surf itself, that is, the breach of the water, or else the shoal or breakers on which it beats.

"considerable

“ considerable way into the sea.” These, as nearly as I can render them, are the very words of Arrian, and a single glance at the Jask of Captain Blair’s sketch seems now to determine the question past contradiction. The extent of the surf naturally implies the extent of the projection; and if extent is not the peculiar feature of Jask, in opposition to Bombareek, there is no truth either in the plan of Baffin or the sketch of Blair: add breakers to this projection, and the picture is complete. But we may advance one step farther still, for Arrian says expressly, that from this cape the course was no longer west, but north-west. This is true of Jask, but not of Bombareek; for from Bombareek the course would be almost due north. Let us hear modern authority upon this point. Cutler, in his *Coasting Pilot*, fixes the same points for Jask and Bombareek as Captain Blair; and he asserts²³¹, that “ from Guadel to Jask the coast lies west by north, and east by south;” but “ from the point of Jask to the low point of Bombareek the course is *north-west*.”

These are the grounds upon which I venture to assert, that d’Anville is in an error at the commencement of his discourse; but it is an error arising, not from want of research or discernment, but from the materials he had to work upon; and from a false confidence common to too many of his countrymen, who place their trust in translators, instead of referring to the original text. The attention paid to this station of Badis will not be deemed superfluous, when it is considered that the geography of Ptolemy and Arrian are thus rendered consistent, and the true limit of Karmania fixed. Neither will the modern navigator be displeased to obtain the true Cape Jask, which, if native information be the best, is fixed immutably

²³¹ P. 69 and 70. in Mr. Dalrymple’s Collection. He writes Jafques and Combarick.

by Captain Blair. It is no ordinary pleasure to have my own doubts satisfied; for, having originally assumed Muckfa for Badis, I had afterwards changed the arrangement in deference to d'Anville, I now revert to my first opinion²³², upon the authority here produced; and I know not of any one suggestion to the contrary, except that Badis and Bareek bear a distant resemblance. The precision which has been attained by these inquiries will enable me now to reduce two previous stations to probability, which were passed in haste; for Dagasira falls in, by the measures of Arrian²³³, with the first cape west of the Tanka, and Træsi must of course be about eighteen or twenty miles eastward of Dagasira. My first arrangement of the stations from Kyiza had been very different, but the measures are more correct by the present allotment, which is founded on the information of Otter compared with Ptolemy, and is upon the whole as accurate as any statement can be expected in a tract of the greatest obscurity. Træsi is the only place I have reason to doubt, and the corruption of the text renders it a hopeless search. I would have carried it either to the Mafis of Ptolemy or the Salarus of Marcian, where a river is still marked by Commodore Robinson, if the cape had not stood in the way; but I can determine little what is right, except from the order given to it by Arrian. The same must be confessed of Ptolemy's Rhogana and Ommana. The journal, indeed, is not concerned with them; but I would wish to assign them a site, though it is not easy to discover one, unless they lie between the two capes east of the Tanka, and

²³² In consequence of this fluctuation, this part of the narrative has been reviewed and written three times over.

²³³ Eleven hundred stadia, nearly sixty-nine miles.

then the Agris³³⁴ of Ptolemy interferes with the disposition. I shall add but one particular more, as a general confirmation of the arrangement I have adopted, and submit the whole to the judgment of the reader. It is this:—The rivers of my ancient authorities are all found upon the modern charts; if, therefore, an individual position should be wrong, the general delineation is nevertheless right; and I add, upon the comparison it will prove that Kan is equivalent to Kienk, and that both indisputably mark a river.

- Kan-driakes, - the Kie-Kienk, between Guttar and Churbar.
- Kana-difa, - the river at Tiz.
- Kana-Té, - the Tanka.
- Sarus, - the Isqui, or Iskim.
- Kan-Ratis, or Batis, the river at Badis, or Jask.

These five streams appear in Arrian, Marcian, and Ptolemy, and five only, without addition, on the modern charts; four of them

³³⁴ The Agris of Ptolemy is written Agrifa, as Hudson informs us, by the old interpreter of that author; and Agrifa it appears in Marcian; in the Table I have ventured to form, Agarifa, and then transpose the syllables so as to extract Agasira or Dagasira from it. If the reader should doubt the propriety of these transpositions, I must observe that the corruption is not merely European, but Oriental also. Gezira is a town of some note on the Tigris, near Merdin, and takes its name from being surrounded on three sides by a winding of the river. Dr. Howel, who came by this route from Basra to Constantinople, says, the natives call it Jesseera or Geraza. (See his Journal 1788, p. 79.) If he had written both words, as he ought to have done, with the same letters transposed, we should have had the very transposition from the natives for which I contend:—Gerifa, Gefira; Jesseera, Jereessa. The errors which arise between the

eye, the ear, and the mouth, in hearing, writing, and pronouncing, are beyond calculation, besides those which proceed from ignorance. Two instances are before me which may cause the reader to smile. The English translator of Bernier's Travels makes the French physician say, that he was hospitably entertained by the English at Calcutta, who treated him with an excellent liquor called *Bouleponge*. The translator never once suspected that his countrymen made a *bowl of punch*.

A second occurs in Pietro della Vallé. His French translator says, he embarked in an English ship at Gomroon, called the *Vubali*. This strange word is nothing more than the *Whale*. But the Frenchman, having no w in his own language, wrote two v's, or rather Vu, and then turned an Italic *b* into a *û*; thus *Whale* became *Vubali*. Etymologists are often ridiculed; but I claim no small share of credit for the resolution of this difficulty.

occur with the adjunct Kan. Is it arrogance to say that this amounts to demonstration?

At Badis²³⁵ is the boundary between Karmania and the desolate coast of the Ichthyophagi; and at this limit I must pause; to consider the sum of Arrian's measures, and to compare them with the actual extent of the coast. This labour indeed is shortened by the Table already given from Mosarna, comprehending seven thousand four hundred stadia out of the ten thousand which form Arrian's total between Malana and Badis; but this total, like many others, differs from its particulars, for the numbers from Malana to Mosarna stand thus:

		Stadia.
To Bagasira,	-	600
To Kolta,	-	200
To Kalama,	-	600
To Kyfa,	-	200
To Mosarna,	-	150
		1750
		250 from Rook.
		2000
		7400 to Badis.
		9400

²³⁵ After conjecturing that the adjunct BA marks a *bay*, or that part of a cape which joins the main, I ought not to contradict this by a new supposition; but I cannot help noticing that *Badb* in Hebrew signifies a *limit* or *boundary*; and for the connexion between Hebrew, Arabic, and Persian, see the questions proposed by Michaelis, &c. to Niebuhr and his

fellow-travellers, in the first volume of Arabia.

²³⁶ Rook's addition is fair; for one hundred and fifty stadia are assigned to the cape alone; but I observe, where a cape is marked and no distance afterwards given, the fleet appears to anchor as soon as it is round. See Eirus.

To this sum Rook adds six hundred ²³⁷ stadia, for a distance omitted between Kanafida and Kanaté, to make up the ten thousand of Arrian. These six hundred I have omitted, from the pressure of numbers too high on that part of the coast, and comprehended the whole two days' course in the seven hundred and fifty stadia to Kanaté. Nothing, however, is gained by this; for though it eases the measure on the coast, it still disagrees with the total. It is not a little remarkable, that Strabo's ²³⁸ measure of the whole coast should be the precise sum that Arrian reckons from Mofarna, seven thousand four hundred; and as Marcian and Ptolemy extend the limits of Karmania to Mofarna, if I had found the same number in Marcian, I should have concluded Strabo had been misled by some boundary of the same kind: but Marcian's total from Badis to Mofarna is four thousand six hundred, and from Karpella one thousand more. I shall produce a reason likewise presently, why I think Marcian reckoned by a different stadium: but let us first observe, that by Arrian's total,

10,000 stadia produce	—	625 British miles,
Strabo's 7,000	—	462 ¹ / ₂
Commodore Robinson's chart,	—	480 ²³⁹
		625
		480

so that the excess upon the whole coast, by Arrian's numbers, is 145

²³⁷ By an error of the press, it appears nine hundred.

²³⁸ Gronovius doubts Casaubon's statement of Strabo's sum. Arrian, p. 344.

²³⁹ The four hundred and eighty miles are continued here, to correspond with the same number in Book I. Art. Stadium: but an error was there noticed, arising from the diminution of a degree of longitude in latitude 25, and there is a second error to be acknow-

ledged here; for the former measure was taken to Karpella, twenty-seven miles west of Jask, as I did not at that time know the real distinction between these capes. After due allowance made for both these errors, and some considerations of smaller moment, there is still room for farther discussion, if I had not already dwelt on these minute particulars too long.

miles,

miles, and Strabo's comes much nearer to the truth. It is not possible to account for Arrian's excess by the sinuosity of the coast; for no shore of equal extent has fewer curves: but if the excess cannot be justified, it justifies the system I have adopted all along this tract of the Ichthyophagi, of shortening all his measures where the nature of the course or character of the coast required it. It is not just to charge Nearchus with a design of lengthening this navigation, in order to enhance the difficulty or the danger: but distress and famine make every passage appear longer than it is, as mariners assure me; and when the fleet under the guidance of Hydrakes kept at a farther distance from shore than Greek pilots would have dared, it is probable that measures were ascertained with less correctness, or inflamed by conjecture. Marcian, in the proem to his work, has fully stated the difficulty of obtaining correct distances by means of itineraries and journals; some measure by a right line, some by the curvature of the coast, and all in general exceed the truth. That this, therefore, should take place in the narrative before us, will not appear extraordinary to those who know that the length of the Mediterranean was estimated by the longitudes of Ptolemy till the last century, and that it was curtailed of near twenty-five degrees by observation²⁴⁰, no farther back than the reign of Lewis XIV.

The general excess of Ptolemy is too well known to require a comment here; but the effect of it upon this coast will explain the estimates of Marcian upon a principle that has never been noticed

²⁴⁰ Mercator's map in Ptolemy gives the Mediterranean near 65°; d'Anville's little more than 40°.

Scanderoon, Alexandria, and Constantinople were determined by Mr. Chazelles, about the year one thousand six hundred and ninety-

three, sent up the Levant for that purpose. The meridian of Paris to the Straits of Gibraltar about one thousand seven hundred and twenty. Some doubt still remains between Gibraltar and Algiers. Blair's Rise and Prog. of Geog. p. 154.

hitherto by geographers. Ptolemy places Karpella in longitude²⁴¹ 94° , and Mosarna $103^{\circ} 15'$; the interval is consequently $9^{\circ} 15'$ degrees of longitude; and, upon the same interval, Marcian reckons five thousand six hundred stadia, which brings his estimate to six hundred and twenty-two stadia for a degree of Ptolemy's. Let us then advert to the common calculation of the Greeks, six hundred and twenty stadia²⁴² to a degree, and we immediately discover, that Marcian's stadium is the Olympian, of eight to a Roman mile, and not the stadium of Arrian, which is nearly fifteen to the same measure. It is evident therefore that Marcian, as the copyist of Ptolemy, has taken his degrees for a standard, and formed his own measures by this calculation of six hundred and twenty stadia to the degree. In order to apply this estimate then to the case before us, let us next take the measures between Mosarna and Badis. The stadia of Arrian are seven thousand four hundred upon this interval, and those of Marcian four thousand six hundred: but as Arrian's stadia are fifteen to a mile Roman, they produce four hundred and ninety-two²⁴³ miles Roman; and as Marcian's are eight to the same measure, they give five hundred and seventy-five miles Roman. From this deduction, therefore, it is manifest that the estimation of the coast by Marcian is more in excess than Arrian's statement; and upon repetition of this experiment upon the whole extent from

²⁴¹ In latitude 25° , which is the medium of this course, a degree of longitude contains in reality but fifty-four one-half geographical miles; and upon this, some farther inquiries might be grounded: but the object here is only to obtain a general deduction, and the reasoning, as far as I am a judge, is conclusive: but I refer it with great deference to

professed geometricians.

²⁴² D'Anville reckons six hundred, Gosselin seven hundred, for a degree of a great circle: the ordinary and usual estimate is six hundred and twenty.

²⁴³ Equal to four hundred and sixty-two miles English. The fractions are omitted.

Karpella to the Indus, I had the satisfaction to find that the issue was nearly the same.

By this method, if I cannot reconcile Arrian's account to truth, I at least account for his error; and I shew that his error is less than that of other ancient geographers. Even in his error, I find the means of elucidating his narrative; for there is little reason to object to the position of the stations in the order they appear, but the discordance of the measures. This discordance affects, in reality, only one place upon which there remains any just reason to doubt; that is, Træsi. If this be carried to the Sarus, Dagasira must be fixed at the second cape westward of the Tanka, instead of the first; and this encroaches as much on the measures between that cape and Badis, as the contrary supposition does on the distance between the Tanka and the first cape. Working as I have done upon scanty materials, I trust that merit will rather be imputable, for the service performed, than blame incurred, for the degree of obscurity which remains²⁴⁴. Some obscurity remains upon all nautical measurements; and if modern navigators, with the assistance of instruments which divide to a second, still differ in their observations, what allowance ought not to be made to the ancient discoverers, who had only the eye and the hand to direct them, and who consequently drew the best of their conclusions from conjecture?

The time employed on the coast of the Ichthyophagi is twenty-one days, according to the account in the margin, which reduces each day's course to an average of twenty-two miles on the real

²⁴⁴ Φημι δὲ ὅτι ἐκ τῆς ἀπασιν τοῖς τῆς θαλάττης μέτροις ῥαδίοις εἶναι τὸν τῶν ραδίων ἀριθμὸν πρὸς τὸ ἀκριβέστατον ἀνευρεῖν. It is no easy matter to determine accurately the number of *radia* upon any coast. Marcian Heracle. p. 3.

measure, and twenty-nine upon the measures of Arrian. The estimate of time may be corrected, when the fleet opens a communication with the army in Karmania. The allowance, therefore, of a day upon some particular intervals, where there was no evidence in the journal, cannot materially affect the correctness of the account. As the fleet sailed with a pilot on board, and with the advantage of the monsoon, more days may have been allowed than necessary, and less extent given to the average of each day's course; but there are data to correct the statement, which will be produced on the arrival of the fleet at the Anamis.

The manners of the wretched inhabitants have, occasionally, been already noticed; but Nearchus dwells upon some farther particulars, which, from their conformity with modern information, are worthy of remark. Their ordinary support is fish, as the name of Ichthyophagi, or fish-eaters, implies; but why they are for this reason specified as a separate tribe from the Gadrosians, who live inland, does not appear. Ptolemy considers all this coast as Karmania, quite to Mosarna; and whether Gadrosia is a part of that province, or a province itself, is no matter of importance: but the coast must have received the name Nearchus gives it from Nearchus himself, for it is Greek, and he is the first Greek who explored it. It may perhaps be a translation of a native name; and such translations the Greeks indulged in, sometimes to the prejudice of geography²⁴⁵. But these people, though they live on fish, are few of them fishermen; for their barks are few, and those few very mean and unfit for the service. The fish they obtain, they owe to the

²⁴⁵ Heliopolis in Syria, Polytimetus a river in Sogdiana, Hecatompylon in Parthia, &c. &c. are all instances of this practice.

flux and reflux of the tide; for they extend a net²⁴⁶ upon the shore, supported by stakes of more than two hundred yards in length; within which, at the tide of ebb, the fish are confined, and settle in the pits or inequalities of the sand, either made for this purpose or accidental. The greater quantity consists of small fish; but many large ones are also caught, which they search for in the pits, and extract with nets. Their nets are composed of the bark or fibres of the palm, which they twine into a cord, and form like the nets²⁴⁷ of other countries. The fish is generally eaten raw, just as it is taken out of the water, at least such as is small and penetrable; but the larger sort, and those of more solid texture, they expose to the sun, and pound²⁴⁸ them to a paste for store: this they use instead of meal or bread, or form them into a sort of cakes²⁴⁹ or frumenty. The very cattle live on

²⁴⁶ Those who are acquainted with the coast of Kent will recollect a similar practice in Sandwich Bay, called Pegwell Bay from this circumstance, where the nets are of much greater extent; Arrian says two stadia (equal perhaps to two hundred and eight yards English), meaning to express a great length. I am aware that the expression may be judged to interfere with the small stadium of d'Anville, but every thing is small or great by comparison; and if the ordinary Greek net was less than two hundred yards, this is consequently large.

²⁴⁷ The use of the net was found, I think, in every island of the South Sea visited by Captain Cook, and on every coast except New Holland. Specimens of the natives' skill in the art of net-making are found in the British Museum. This, among other endowments, tends to prove them of a superior origin to the Blacks of New Holland or New Guinea, they are probably Malay, as the vocabularies of their language seem to prove.

²⁴⁸ καταλῶντις, rendered by Vulcanius. *Maiores vero durioresque ad solem torrentes simul ac penitus tostii fuerint molentes in farinam redigunt*; that is, they grind them and make a paste or caviar of them. Gronovius objects to grinding them, as they have no mills. He proposes to read καταθλῶντις, *pounding*, or κατακλῶντις, *breaking small*; both which manners of preparation are justified by Strabo's mention of mortars made of the vertebræ of the whale, and the paste or meal noticed by Arrian: and καταλῶντις *grinding*, may be thought not to depart from its proper sense, if we consider the people spoken of, though they had no mills. The same kind of paste is made to the present day on this coast, on the coast of Arabia, and in the gulph of Persia.

²⁴⁹ *Māzai, Polenta*, a thin cake or paste of meal, still used in Italy by the name of Polenta, according to Barretti. (Letters to S. Sharp.) The ancient Polenta was sometimes not a solid.

dried

dried fish, for there is neither grass nor pasture on the coast. Oysters, crabs, and shell-fish are caught in plenty; and though this circumstance is specified twice only in the early part of the voyage, there is little doubt but that these formed the principal support of the people during their navigation. Salt is here the production of nature; by which we are to understand, that the power of the sun in this latitude is sufficient for exhalation and chrySTALLIZATION without the additional aid of fire; and from this salt they formed an extract²⁵⁰ which they used as the Greeks use oil. The country, for the most part, is so desolate, that the natives have no addition to their fish, but dates: in some few places a small quantity of grain is sown; and there, bread is their viand of luxury, and fish stands in the rank of bread. The generality of the people live in cabins, small²⁵¹ and stifling; the better sort only have houses constructed with the bones of whales; for whales are frequently thrown²⁵² up on the coast, and when the flesh is rotted off they take the bones, making planks²⁵³ and doors of such as are flat, and beams or rafters of the ribs or jaw-bones: and many of these monsters are found fifty yards in length. Strabo confirms this report of Arrian; and adds, that the vertebræ or socket-bones of the back are formed into mortars, in which they pound their fish, and mix it up into a paste, with the addition of a little meal.

²⁵⁰ Ἐλαιον, oil. But how oil from salt? says Rooke. Read Ἐλαια for Ἄλς; for what else is oil made from but olives? If olives were found upon this coast, the reading might be just; but olive oil was such a luxury to the Greeks, that if a single tree had appeared on the coast Nearchus would not have omitted the mention of it. He affirms the direct contrary.

²⁵¹ Εἰ καλῶσαις πνευμαῖς. See Ar. 335.

²⁵² Strabo says the bones only.

If they had the art of splitting whalebone, a very commodious covering might be obtained, for the jaws of this fish furnish a thousand plates from twelve to fifteen feet long, eight or ten inches broad. Lettice's Tour in Scotland, p. 421.

²⁵³ From a part in the jaw.

To this scanty list of provisions our modern voyagers add little. Barbofa, Thevenot, Tavernier, and Niebuhr, all mention fish on this coast as still the food of the natives, and from hence all up the eastern shore of the gulph of Persia; to which Lieutenant Porter adds a few goats and sheep, neither cheap or good; and once only he mentions vegetables at Churbar, which were good but very scarce. Whether camels are usually eaten on this coast, as they are in Arabia, is not ascertained; those which Nearchus procured at Træsi he seems to have employed, as the inhabitants of a besieged town may sometimes be reduced to feed on horse-flesh: but beyond this instance I find nothing specified. Marcian mentions a tribe called Camel-eaters²⁵⁴, in Karmania, if they are not rather Camel-feeders; and another styled Turtle-eaters at Samydaké²⁵⁵, on the coast of the Ichthyophagi: it should rather seem that all these names imply disgust at the manners of the natives.

Whether whales are found on this coast at present, or whether houses are still built of their bones, I find no authority to determine. The silence of Lieutenant Porter appears in evidence against it, for it is a peculiarity which would be as likely to command the attention of a modern as an ancient navigator; and whether the animals seen by Nearchus were whales, or not, may possibly be disputed, for the Greek word may be applied to any fish of great magnitude. The size of fifty yards²⁵⁶ seems to confine the expression to this animal;

²⁵⁴ Καμηλοφάγοι, if eaters, would be rather Καμηλοφάγοι, like χαλνοφάγοι, &c.

²⁵⁵ Written Αμυδακήν: so little apology is wanting for the addition or subtraction of an initial letter.

²⁵⁶ ἑικοσι καὶ πέντε ὀργυιάς. Twenty-five fathoms.

δια περὶ ἐκ πρηνήρων. Βία ἀναφερόμενον.

I never reflect on this passage without adverting to Thevenot's description of the water-

spouts seen by him nearly in this very sea. Part II. p. 185. Eng. ed. Πρηνήρ, however, is said not to be the word which usually expresses that phenomenon, but Τυφών. Yet I see nothing in either to apply one more particularly than the other, except the modern distinction. I do not mean to infer that Nearchus mistook a water-spout for the blowing of a whale; but the comparison, in this sea more especially, is remarkable.

and

and though blowing is not peculiar to the whale, the circumstances which are immediately subsequent will best determine the judgment of the reader.

For Nearchus says, that on the morning he was off Kyiza or Guttar, they were surprised by observing the sea thrown up to a great height in the air, as if it were carried up by a whirlwind. The people were alarmed, and inquired of their pilot what might be the cause of the phænomenon; he informed them, that it proceeded from the blowing of the whale, and that it was the practice of the creature as he sported in the sea. His report by no means quieted their alarm; they stopped rowing from astonishment, and the oars fell from their hands. Nearchus encouraged them, and recalled them to their duty, ordering the heads of the vessels to be pointed at the several creatures as they approached, and to attack them as they would the vessel of an enemy in battle: the fleet immediately formed as if going to engage, and advanced by a signal given; when shouting all together²⁵⁷, and dashing the water with their oars, with the trumpets sounding at the same time, they had the satisfaction to see the enemy give way; for upon the approach of the vessels the monsters a-head sunk before them, and rose again a-stern, where they continued their blowing, without exciting any farther alarm. All the credit of the victory fell to the share of Nearchus, and the acclamations of the people expressed their acknowledgment, both of his judgment and fortitude, employed in their unexpected delivery.

The simplicity of this narrative bespeaks its truth, the circumstances are such as would naturally occur to men who had seen

²⁵⁷ ὅσον αἱ κεφαλαὶ αἰτῶσιν ἐχώριον ἱπαλαλαῖσαι. As loud as they could shout the *alala*, or cry of war.

animals of this magnitude for the first time; and the better knowledge our navigators are possessed of, who hunt the whale in his polar retreats, shews that he is sometimes as dangerous an enemy as he appeared to the followers of Nearchus.

The mention of this engagement might have been spared in a work dedicated to geographical research, but those who are acquainted with Arrian would not have pardoned the omission; and it is one part of my intention not to defraud Nearchus of any honour due to him, either for his fortitude or his nautical abilities. This transaction is almost the only part of the voyage that Diodorus thought worth recording; and if the readers of his age had a relish for this sort of history, why should he not have indulged their taste? But there is a second tale too singular to be passed without observation, for we are informed that the Ichthyophagi derive their origin and manners from a race of men who frequented these seas, and who having by chance or enchantment landed on an island named Nofala, were there entertained by a Nereid, and afterwards transformed into fish. Fortunately for the metamorphosed, this spot was under the protection of the Sun, who, displeased equally at the cruelty of the nymph as her licentiousness, ordered her to depart the island. She submitted to the decree, and was preparing for her exile; but, as a last effort, she hoped by a display of her charms to entangle the god, and involve him in the same fate²⁵⁸ as his predecessors in her favour had experienced. How great was her mortification, when she found him inattentive to her allurements, and employed in a second transformation of her lovers into their

²⁵⁸ This is Gronovius's interpretation of an obscure passage.

native figure? From these men, so happily restored, the Ichthyophagi derive ²⁵⁹ their origin.

Arrian ²⁶⁰ is offended at Nearchus, first for recording this fable, and then for refuting it: but the story is perfectly Greek; for the Nereid is only Circe, or Calypso, conveyed to the East Indies, and Apollo is Ulysses, but with more continence. The catastrophe of the piece, which consists in the delivery of the metamorphosed, is brought about with more dignity by Apollo's resisting the temptation, than by Ulysses's ²⁶¹ yielding to the solicitation of the enchantress.

The best excuse for introducing this tale is, that Nearchus had lost one of his transports manned with Egyptians, and the report was current in the fleet that the vessel had disappeared at an enchanted island; Nearchus ordered out a party to visit this isle, and call aloud the names of those whom he supposed to have been shipwrecked. Not content with this, he went himself to the place, and compelled his people to land, much against their inclination; but they found neither their lost companions nor the Nereid.

Possibly even this excuse will not be admitted; for no island occurs on the whole coast after leaving Ashtola, except a very small one in Guttar Bay, which must have been seen on the day the nameless town was taken, and which lay too clearly in view to cause these idle terrors. If any island exists, it ought to unite the

²⁵⁹ These are the Myrmidons of Thessaly, similar circumstances; but without the Nereid. the Sparti of Thebes, transplanted to an Indian soil. Nearchus imputes the fable to his Indian guides: but it is Greek; unless fables similar to the Greek mythology are current all over the world.

²⁶⁰ Strabo mentions this story, p. 726, with this subject in Rousseau's *Emile*.

²⁶¹ Ulysses resisted the cup, but not the passion of Circe. *Od. K. 347*. His refusal of the cup forms an allusion for the moralist; his passing a year with the goddess is suppressed. See a very elegant frontispiece on

Polla of Ptolemy with this Nofala²⁶²; but the coast is now too well known to give us hopes of finding²⁶³ one; and if not found, the whole is a tale calculated to raise the importance of Nearchus, and shew that he was the only man in the fleet who feared neither the blowing of a whale, nor the enchantment of a Nereid.

Upon a review of both these stories, we shall be induced to reflect that Greek mariners were subject to vain terrors and superstitions like those of our own country; and in both, if we find this failing not incompatible with determined bravery, we ought to allow due merit to every commander who knows how to suppress the one, and call the other into action.

I cannot take a final leave of this coast without observing, that the whole distance from the Indus to Cape Jask comes out as near as may be, six hundred and twenty-five miles, equal to the estimation of Arrian on the coast of the Ichthyophagi alone; and this number of miles Nearchus was from seventy to seventy-five days in passing: if, however, with due allowance made for setting out against the monsoon, and twenty-four days lost at Cape Monze, we reduce the whole to forty²⁶⁴ days, we may form a comparative view between ancient and modern navigation; for it appears from the journal of the Houghton East Indiaman, that she made the same run in thirteen days, and upon her return was only five days from

²⁶² Nofala lies one hundred stadia, or six miles, from the coast. Arrian.

²⁶³ "There are very few islands on this coast." M'Cluer, in Mr. Dalrymple's Collection, p. 98. But in several charts of the gulph of Persia one island, and in some two very small ones, are specified a little to the eastward of Cape Jask. They are apparently nothing more than hummocks upon a

low coast shewing themselves like islands at a distance; and laid down as such by those who never approached near enough to ascertain them. D'Anville has thus made islands of Godeim and Bombareek.

²⁶⁴ Some days were lost on the junction with Leonnatus, and at the Tomérus, but not more than were necessary for repairs.

Gomeroon²⁶⁵ to Scindy Bar. But so far is this from diminishing the credit of the first navigators, that it is enhanced by every difficulty they had to surmount; weak vessels with inexperienced mariners, no provisions but such as an unknown coast might furnish, no convenience for sleeping on board, no pilot but such as they might casually pick up on their course; no certainty that this sea was ever navigated before, or even navigable; and no resources such as the moderns have, without number, in their arms, their instruments, their experience, and the accumulated acquisitions of knowledge, whether practical or theoretical. Under all these disadvantages, if the object was attained, and the voyage completed, it is not the length of the course that ought to raise the name of Columbus higher than that of Nearchus; the consequences derived from the discoveries of both are equally important, and the commerce with the East Indies upon a level with that of America: but if the communication fixed at Alexandria is the origin of the Portuguese discoveries, and the circumnavigation of Africa, Nearchus is in fact the primary author of discovery in general, and the master both of Gama and Columbus.

There is one extraordinary circumstance attending this expedition, which is, that we find no mention of mutiny or disease among the people: the former would be naturally checked by their situation, for they had no second hope if they failed in the execution of their enterprise, and no chance of preservation but by obedience to their commander; the latter was less likely to occur, from the circumstances peculiar to the navigation; and the maladies arising from famine or bad provisions appear not to have had sufficient time to exhibit their worst effects: as far as can be collected from the

²⁶⁵ Gombroon, Gambroon, &c. the *s* inserted, as in Cymeru, Cambro-Britons.

journal, they were never without shell-fish till within a few days of their arrival; and scorbutic disorders, which are the scourge of the mariner in the protracted voyages of the moderns, are never noticed by the ancients. The proximity of land, the frequency of sleeping on shore, and the properties of their vessels, which were not decked, seem to have operated to the exclusion of a disease, which two hundred years experience is only now teaching modern navigators to combat, and this experience nothing but the persevering discipline of Cook could have reduced to practice.

It is not apparent that the passage²⁶⁶ from the Indus to the gulph of Persia had ever been performed by the natives, for however great the commerce on that river was, and however extended, its progress naturally bent towards the coast of Malabar and the peninsula. The natives there, were all Indians; while on the west, the name terminated at the Arabis, and all Indian manners with the boundary of the Oritæ at Malana. This appears to me a proof that no commerce from the Indus was carried farther by the Indians; the other natives, whether Oritæ or Ichthyophagi, had no embarkations even for fishing, and the Persians were never navigators. If any vessels, therefore, visited these coasts even in that early age, they were probably Arabian²⁶⁷; but of this there can be no satisfactory evidence.

²⁶⁶ Τὰ μὲν γὰρ τῆς Ἑώας Ἀλέξανδρος ὁ Μακεδὼν ὅλην τοῖς ἀνθρώποις πάντα κατέστησε.

Anonymous author, cited by Dodwell in his Dissertation on Scylax, p. 47.

Alexander was the discoverer of the east.

²⁶⁷ The reason for this conjecture has been noticed upon the mention of Dagasira; and I suspect Sakala, Kokala, Gogana, Malana, Talmena, &c. to be all Arabic, if their signification were traced. When I meet with a river called Ægospotamos, I can discover the language of the nation from whence the name

is derived as readily as I can assign Cape Finisterre, Cape Clear, or Christmas Sound, to the respective people who have bestowed these appellations.

"There is a striking analogy between the manners ascribed to the ancient Ichthyophagi and those of these Arabs [on the eastern coast of the gulph of Persia]. . . . They use little food but fish and dates; they feed also their cattle upon fish." Niebhur, Eng. ed. vol. ii. p. 138.

That something passed upon the sea, and in all appearance from port to port, there seems to be ground for supposing; for Hydrakes could not have been worthy of employment without some sort of experience; and there is a shadow of evidence that the pirates to eastward of the Indus, who have been pirates in all ages, accidentally visited the coast, either for the purpose of intercepting the traffic, or of plundering the property of the inhabitants; and yet what temptation could they present, unless slaves were a commodity? If so, their persons might be seized, provided there were any record of a market to point out where they were disposed of, but the whole testimony which can be collected amounts in no degree to a proof of a navigation like that of Nearchus from India to Persia; and as this is the principal link in the future chain of communication with Europe, the merit of examining it seems wholly due to him as the original undertaker. I am not ignorant of a much longer voyage in this very direction imputed to Scylax by Herodotus²⁶⁸, from Pactya (the Pekeli²⁶⁹ of Rennell) into the gulph of Arabia; but whether this voyage was performed by the Persians, or that other round the Cape of Good Hope by the Phœnicians from Egypt, as recorded by him, is a point highly problematical in the opinion of every one who considers the structure of ancient vessels, and their whole method of navigation: I believe the record of both, as preserved by Herodotus, to be evidence that the Persians or Egyptians knew, from communication with the interior of the respective countries, that they were bounded by the ocean, and afforded the means of navigation; but that the voyages were actually performed.

²⁶⁸ Herod. lib. iv. p. 300.

Caspatus, to be on the Ganges. See Dis-

²⁶⁹ The province Peckeli, or Puckeli, on the Indus; but Dodwell supposes Pactya, or

sert. on Scylax.

requires more evidence, more particulars, and a clearer detail of facts, to enable us to form a judgment. The bare assertion that the thing had been done might lead Alexander to think it practicable; but the Persian voyage produced no consequences whatever, and the Egyptian navigation led to nothing, unless we suppose the Portuguese discoverers influenced by the assertion ²⁷⁰, that a passage round the Cape was practicable.

Scylax ought to be a Greek by the place of his nativity, Caryanda, or at least an inhabitant of Asia Minor; but we have no remains ²⁷¹ of his journal, and no other evidence of his voyage but the report of Herodotus, which is very deficient in circumstances to confirm its own authority; and collateral evidence there is none. In regard to the circumnavigation of Africa, there is one particular much insisted on by Larcher, Gesner ²⁷², and other commentators, which is, the appearance of the sun to the north; a phenomenon dependent on every navigation within the tropics. The reserve of Herodotus ²⁷³, in saying that others may suppose this probable, though he doubts it himself, is a caution worthy of such a historian, and more persuasive than the boldest assertion. I must, however, notice a peculiarity in this passage which seems to have escaped the scrutiny of his commentators; for he informs us in another place ²⁷⁴, that he went up the Nile himself as far as Elephan-

²⁷⁰ Whether it will be thought probable that the Portuguese navigators, or the council of Portugal, or any of the learned of that country, knew any thing of Herodotus, I pretend not to judge; but it is a remarkable coincidence, that the first edition of Herodotus was in — — 1474.
Gama's discovery of the Cape, 1497

See Pref. to Wesseling's Herod.

²⁷¹ The Scylax, published in the Geog. Minores by Hudson, is proved to be an imposture by Dodwell.

²⁷² See Gesner de Navigationibus extra Columnas Herculis, Præl. I. 6.

²⁷³ Lib. iv. p. 293. Ed. Wess.

²⁷⁴ Lib. ii. p. 115.

tinè, in order to ascertain some circumstances relative to the head of that river, about which he thought himself imposed upon by a secretary of the priests at Sais. Now is it not extraordinary, that if he reached Elephantinè he should not have visited Syene²⁷⁵, the very place at which he represents his doubts to exist? Is it not strange, that though he lived prior to the construction of the well²⁷⁶ at Syene, he

²⁷⁵ The modern Assouan, visited by Pocock, Norden, Bruce, &c. &c. Su-enè is Af-foan with the article. D'Anville, Geog. Anc.

²⁷⁶ I know no testimony of the well at Syene older than Strabo, lib. xvii. 817. but conclude that older may be found. Pliny, lib. ii. cap. 73, seems to intimate, that it was dug by Eratosthenes at the time he was measuring an arc of the meridian. The following observations are kindly communicated by the Bishop of Rochester:

The well, besides that it was sunk perpendicularly with the greatest accuracy, was, I suppose, in shape an exact cylinder. Its breadth must have been moderate, so that a person, standing upon the brink, might safely stoop enough over it to bring his eye into the axis of the cylinder, where it would be perpendicularly over the centre of the circular surface of the water. The water must have stood at a moderate height below the mouth of the well, far enough below the mouth to be sheltered from the action of the wind, that its surface might be perfectly smooth and motionless; and not so low, but that the whole of its circular surface might be distinctly seen by the observer on the brink. A well formed in this manner would afford, as I apprehend, the most certain observation of the sun's ap-pulse to the zenith, that could be made with the naked eye; for when the sun's centre was

upon the zenith, his disc would be seen by reflection in the water, in the very middle of the well; that is, as a circle perfectly concentric with the circle of the water: and I believe, there is nothing of which the naked eye can judge with so much precision as the concentricity of two circles, provided the circles be neither very nearly equal, nor the inner circle very small in proportion to the outer.

Plutarch says, that in his time the gnomons at Syene were no longer shadowless on the solstitial day. This is very strange. Eratosthenes died, according to Blair's Tables, in the year before Christ 194; and Plutarch died in the year of Christ 119. The interval, therefore, between them was only 312 years; and the change of the obliquity of the ecliptic in this time (the only cause to which I can refer the alteration) was no more than 2' 36". A gnomon, therefore, at Syene of the length of twelve inches, if it cast no shadow on the day of the solstice, in the time of Eratosthenes, should have cast a shadow, in the time of Plutarch, of the length only of $\frac{2}{100}$ ths, i. e. not quite $\frac{1}{50}$ th of an inch. The shadow of a perpendicular column of the height of 100 feet would have been $\frac{1}{5}$ ths of an inch. But I can hardly think the ancients ever thought of constructing gnomons of such a size. We read, indeed, in the Comedians, of shadows of ten, twelve, and even twenty feet long. These seem to have been the shadows of gnomons: but

he should mention nothing of the situation of Syene itself under the tropic? Had he been there in summer, he must himself have seen the phenomenon he professes to doubt, or at least the sun vertical; and if his visit was at any other season, is it not remarkable that he should not have heard of this circumstance? Elephantinè is an island, or a city on an island, in the Nile, opposite to Syene²⁷⁷, and yet Herodotus does not quite say he was actually at Syene. From his mention that the Cataracts are four days' sail from the Elephantinè he visited, may we not suspect that it was some island lower down (for there are many), or that the island²⁷⁸ called Elephantinè by Pocock is not the Elephantinè of Herodotus? and that the historian was not nearer Syene than within three days' sail? for it is in reality less²⁷⁹ than one day's sail or journey by land from Syene to the Cataracts. I mention these particulars, in order to shew the great obscurity which attends all the discoveries, whether real or pre-

but they were evening shadows, when the sun was low, and people were going to supper: and this affords an argument that the gnomons of the ancients were of a very moderate size; for in the latitude of 40° , at the season of the equinoxes, the sun's altitude, one hour before sunset, could be $11^{\circ} 26'$; and a gnomon, of the height of 2 feet $\frac{2}{3}$ ths of an inch, would cast a shadow on the horizontal plane precisely ten feet long. Half an hour before sunset, a gnomon of the height of one foot would cast a shadow ten feet long. And in the same latitude, at the same season, a gnomon of the height of six feet would cast a shadow of the length of ten feet so early as eleven minutes after three in the afternoon. I think the small variation that took place, between the time of Eratosthenes and that of Plutarch,

would be more easily discovered by the well than by any gnomon the ancients can be supposed to have used.

²⁷⁷ Pocock, B. ii. p. 117. Bruce.

²⁷⁸ Bruce mentions the island, but does not call it Elephantinè. Vol. i. p. 150.

²⁷⁹ "The distance from the gate of the town [Assuan] to Termiffi or Marada, the small villages on the Cataract, is exactly six English miles." Bruce, vol. i. p. 156.

See also a very curious account of the well and the latitude of Syene, which Bruce fixes at $24^{\circ} 0' 45''$, and consequently not under the tropic, p. 160; but more than half a degree to the north. Bruce, however, allows for the approximation of the ecliptic to the equator. The circumference of the sun's disc is to be taken into the account.

tended, in ages antecedent to history; and notwithstanding all that Mr. Goffelin has produced, to prove an early state of navigation and geography, previous to the knowledge of the Greeks, and founded upon better principles; notwithstanding the erudition displayed by Gefner in his treatise²⁸⁰ on the navigation of the Phœnicians in the Atlantic; there is nothing appears sufficiently satisfactory to establish the authenticity of any one prior voyage, of equal importance, upon a footing with this of Nearchus; or any certainty to be obtained where the evidence is all circumstantial, and none positive. From a journal like the Periplus²⁸¹ of Hanno, a knowledge of the coast of Africa will enable us to form a judgment of his progress; but a bare assertion of the performance of any voyage, without consequences attendant or connected, without collateral or contemporary testimony, is too slight a foundation to support any superstructure of importance. I should think it time well employed to vindicate the honour of Columbus against the usurpation of Vesputius; but I would not bestow a moment in annulling the claim of Madock and his Cambro-Britons to the discovery of America. The reader may conceive that this vindication of Nearchus partakes more of the partiality of an editor than the investigation of truth: but I appeal to the ancient geographical fragments still extant; the Periplus of Hanno, the survey of the Euxine sea by the real Arrian, and that of the Erythræan sea or Indian ocean by the fictitious one; and I say that all these, as well

²⁸⁰ Published with his edition of the works of Orpheus. Dodwell errs as frequently on the side of scepticism as others do on the side of credulity.

²⁸¹ Dodwell doubts the authenticity; but

as the journal of Nearchus, though they have their errors, difficulties, or even absurdities, still contain internal evidence of veracity, and are well worthy of examination; while the expedition of the Argonauts²⁸², of Pytheas or Scylax is merely a speculation of amusement.

There is, however, another way of inquiry into the discoveries attributed to the earliest times, which is, by examining the commodities such discoveries would produce. Tin, the staple of Britain, is mentioned in the most ancient authors neither as a rare nor a very precious metal; this must have been introduced to the nations on the Mediterranean, either by a transport over land (such as is mentioned by Diodorus²⁸³), or through the medium of a Phœnician navigation: the existence of the metal, therefore, in Greece and Asia is a proof that the voyage was performed in some sense or other. The sudden influx of gold into Judæa²⁸⁴ is equally a proof of a commerce extended into the Indian or Æthiopic ocean, beyond the limits of the gulph of Arabia. The materials still found in

²⁸² Gesner, in his Preface to the Argonauticks of Orpheus, is confident that there is no expression that indicates they are posterior to the age of Homer. If the fact is so, it must be confessed that the mention or knowledge of Ireland, which occurs in that work, is an extent of geographical science most surprising; for Homer's information went no farther than Italy, and even there it was only mythological.

²⁸³ Lib. v. p. 361. Ed. Wef.

Diodorus here mentions tin found in Spain, but not in great quantities; and it is highly probable that the grand source of that metal was always in Britain.

²⁸⁴ It is not the business of this work to follow up these several incidents; but Bruce has most admirably illustrated the commerce of Hiram, Solomon, the Arabians and Egyptians on the Red Sea, and most indubitably proved that it tended to Africa rather than Asia. When the haughty spirit which procured so many enemies to this illustrious traveller shall be forgotten, neither his knowledge nor his veracity will be longer impeached. There is much scope for curious investigation upon the whole of this subject, which Dr. Robertson has not prosecuted to its full extent. See Ezekiel, chap. xxvii.

Egypt, that contributed to the preservation of the mummies, are some of them supposed to be Oriental; and if so, Egypt must have had, even antecedent²⁸⁵ to history, a communication with the East, either directly by commerce of their own, or indirectly by means of intermediate nations, perhaps Arabian. In all these cases, we have a right to assume the navigation from the view of its effects; but the voyage²⁸⁶ of Scylax from India to Egypt, or that of the Phœnicians from Egypt round the continent of Africa, have neither produce nor consequences; and though this is only a negative proof of their nonentity, it is as strong as the nature of the case will admit: if no second navigator had doubled the Cape of Good Hope, the discovery of Gama might have been deemed problematical. Were it possible to ascribe these two voyages to the age of

²⁸⁵ "Several authors agree in opinion, that the ancient Egyptians possessed themselves of the trade of the East by the Red Sea; and that they carried on a considerable traffic with the Indian nations before the time of Sesostris, who was contemporary with Abraham." *Astle. Or. and Progress of Writing*, p. 41; who quotes *Rollin*, p. 59, 60. and *Univ. History*, vol. i. p. 513. and might have added *Huet*.

I pretend not to investigate any fact antecedent to history; but I can believe the Egyptians (from the increasing evidence we now have of their arts, through the means of Pocock, Norden, and Bruce) to have been capable of any enterprise. Navigation, however, does not appear as one of their pursuits; for we cannot imagine those who never appear upon the Mediterranean, to have made any great efforts upon the Indian ocean. All the vessels we find in early ages on the Mediterranean are either Greek or Phœnician. Phœ-

nicians navigated the Red Sea for Solomon, and not Egyptians, 2 *Chronicle* ix. 21.; and if the Egyptians had possessed a trade on that sea, they would not have suffered rivals to interfere. The passage round Africa is not attributed by Herodotus to Egyptians, but Phœnicians: but I decline all disquisition on these matters previous to history; and mean at present only to maintain, that if we have the real journal of Nearchus in *Arrian*, it is the first authentic document of a voyage of importance to navigation.

²⁸⁶ It is not impossible that all these assertions of circumnavigation arose from the idea of the ancients, that the ocean surrounded the earth like an island; an idea in some degree true: but unfortunately for one of these assertions, that of *Patrocles*, who maintained there was a passage from the Indian ocean into the Caspian sea, it has turned out that the Caspian is a lake. See *Strabo*, lib. xi. p. 518.

Herodotus, his testimony is such, that it ought to preponderate against every argument of mere speculation: but he probably records only the vanity of two nations, one the most proud of its empire, and the other of its science; both capable of attributing to themselves an action done, if it were possible to be done; and of this, the possibility was perhaps known from internal information. My own opinion is decidedly against the reality of both these voyages; but whatever be my own judgment, it shall be subject to the decision of those²⁸⁷ who professedly consider the question in its full extent; it is here only incidental: but I must still repeat, that it is the assertion of facts without circumstances, while the voyage of Nearchus is detailed in all its parts, and is the earliest²⁸⁸ authentic journal extant. If, then, I am right, this is the first voyage of general importance to mankind; if I am mistaken, it is still the first of which any certain record is preserved.

This discussion may appear more appropriate to the conclusion, than the progress of the enterprise; but the fact is, that, at this point, the great difficulty of the whole passage was surmounted; the remaining part, up the Gulph of Persia, was neither exposed to the calamity of famine, nor hazardous from the nature of the coast. We shall have some opportunities to remark, that as there was commerce among the natives, there were consequently pilots to be obtained; and so satisfied was Nearchus of the

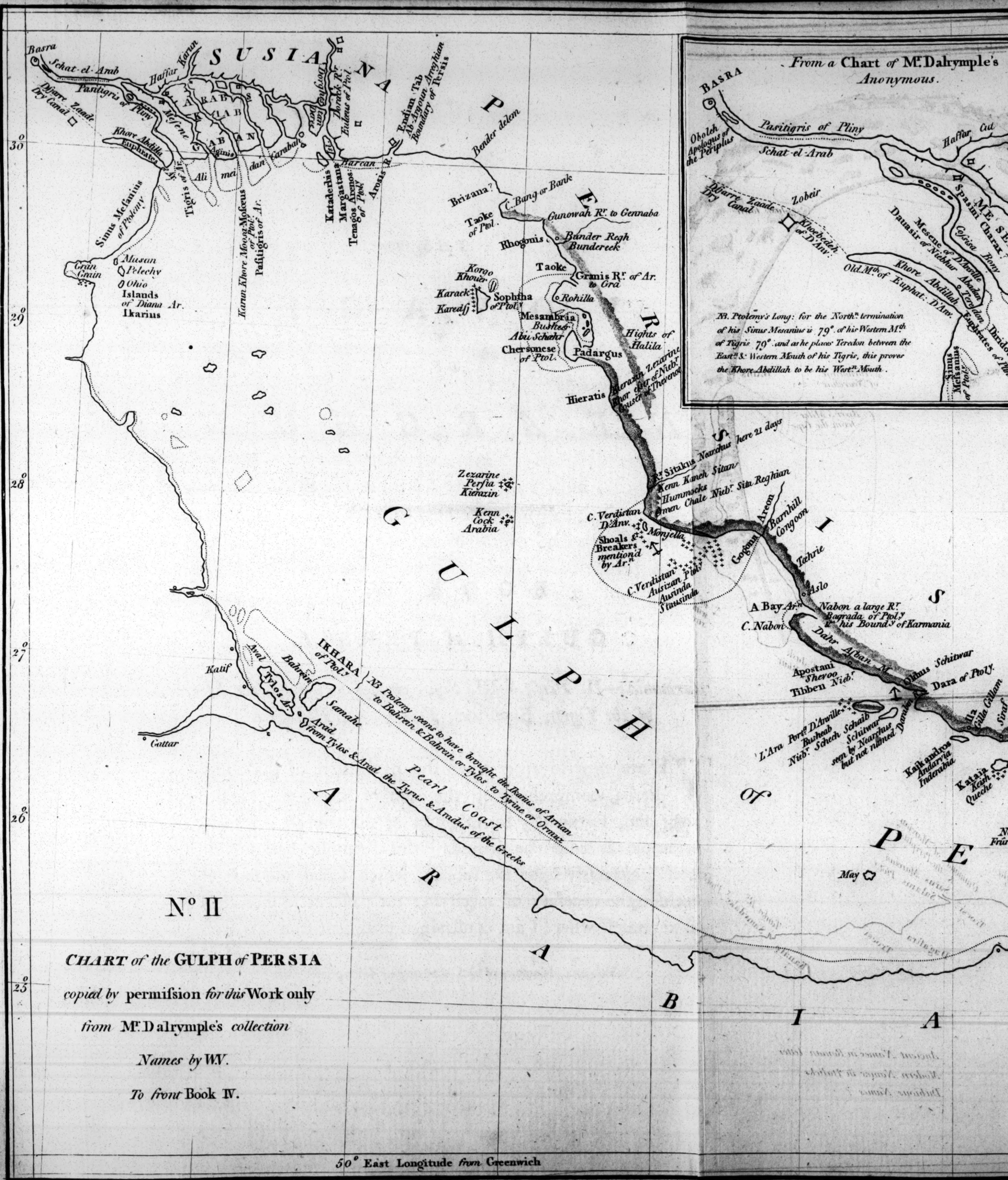
²⁸⁷ Gesner.

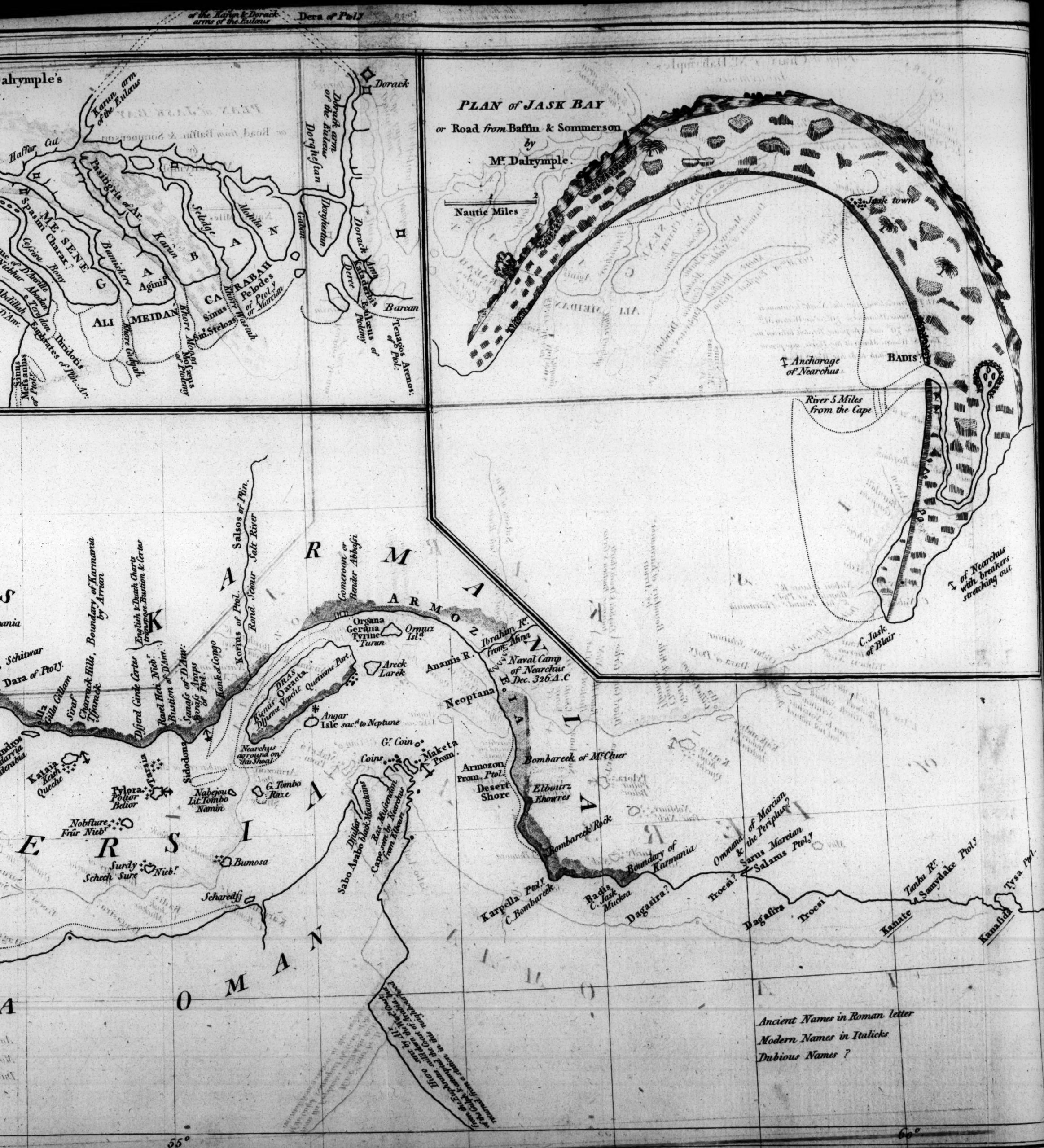
²⁸⁸ It is prior to the Periplus of Hanno, if it is the same Hanno, contemporary with Agathocles as generally supposed, for Agathocles died anno 289 A. C. The Greek Periplus of

Hanno which we have is of late age, according to Dodwell, and a copy or extract possibly from the Carthaginian journal, as Arrian's is from Nearchus.

facility of his future charge, that he refused being exonerated of the command.

The narrative itself also will, in some degree, be relieved from a barren recital of distresses, and a dubious arrangement of geography; our classical guides will be more intelligible; and our modern conductors, Dalrymple, d'Anville, and Niebuhr, more satisfactory. I have already mentioned d'Anville's dissertation on this navigation of the Gulph of Persia; and if I performed no other service than introducing this work to the knowledge of the English reader, it would be an undertaking of merit.





PLAN of JASK BAY
or Road from Baffin & Sommerson
by
M. Dalrymple.

Nautic Miles

Anchorage
of Nearchus

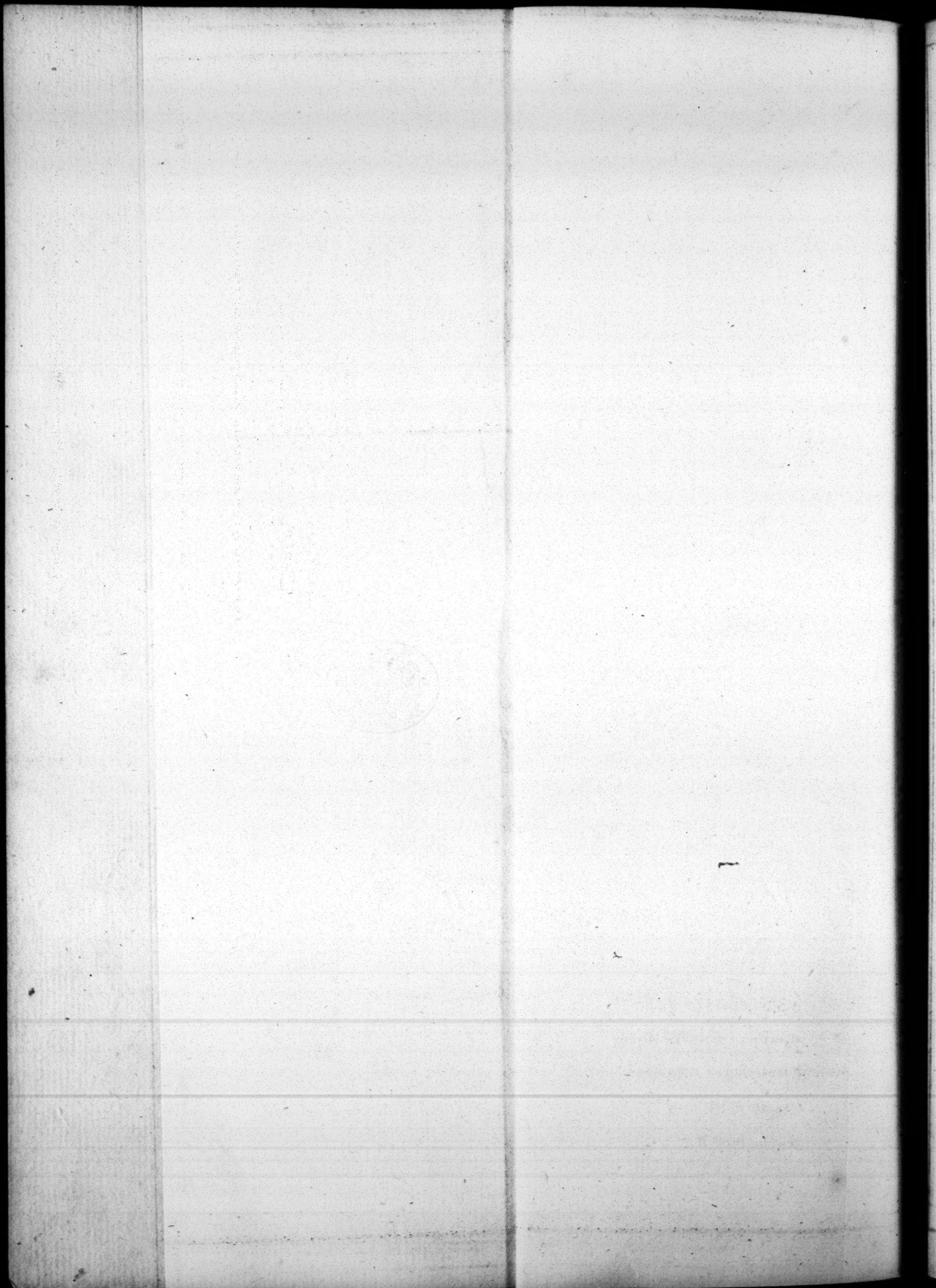
BADIS

River 5 Miles
from the Cape

of Nearchus
with breakers
stretching out

C. Jask
of Blair

Ancient Names in Roman letter
Modern Names in Italicks
Dubious Names ?



THE
VOYAGE
OF
N E A R C H U S.

BOOK IV.

GULPH of PERSIA.

I. *Karmania*.—II. *Persis*.—III. *Sufis*, or *Sufiana*; with the Mouths
of the *Tigris*, *Euphrates*, *Eulaus*, and *Pasitigris*.

WE are now to enter upon the navigation of the Gulph of Persia, comprehending the coast of Karmania, Persis, and Sufiana; and, fortunately for this part of the voyage, our materials are as ample as could be desired. Mr. d'Anville has published a *Memoir* * expressly upon the subject, which I shall use so freely as to preclude the necessity of specifying the passages immediately referred to, unless where I am constrained to dissent from his arrange-

* Vol. xxx. *Memoirs of the Academy of Inscriptions, &c.*

ment;

ment; and this I shall always do with the respect due both to his classical and geographical pre-eminence: but our English navigators have, within these few years, explored this gulph so successfully, as to leave little more for the investigation of others. With these Mr. d'Anville was of course unacquainted; and, for want of the information they afford, was necessarily mistaken in fixing some points of importance, more particularly at the head of the gulph, and the mouths of the Euphrates, the Tigris, and the Eulæus.

I have a variety of charts furnished by Mr. Dalrymple, accompanied with observations of his own*, and illustrated by personal communication with him; but especially four by Lieutenant M'Cluer, a most active and intelligent officer, which render all that concerns hydrography almost as perspicuous as we could hope to find it on any coast of Europe: two of these comprehend the lower, and two the upper part of the gulph; the later publication in both instances is the most correct, and in both instances agrees best with Arrian. This is no accidental correspondence, for Nearchus, by adhering to the coast, is necessarily more minute than a modern navigator who pursues his course unrestrained; but the more such a navigator enters into the detail of the coast, and the more intimate knowledge he acquires of it, the better ought his information naturally to coincide with a journal of such discoverers as the Greeks. Mountains, rivers, bays, shoals, and islands are in their nature eternal; if these are marked

* Charts from Mr. D.
Four by M'Cluer.
Two by Harvey.
Two by d'Apres.
One, Niebuhr.
One, Van Keulen.
Two, Thornton's.
One, Claude Russell.

One, Anonymous by Dalrymple, containing the mouths of the Euphrates.—Besides a variety of plans and topographical sketches.
One, Lieutenant Cant.
One, Kämpfer.
One, Engelbert.
One, Friend.

distinctly

distinctly by Nearchus, they will still be discoverable by their features; if otherwise, I would abandon the journal as a fiction. The issue is, however, exactly what we could desire; for such is the conformity of it with the modern accounts, that there will not remain a doubt³ upon more than one or two stations in the whole gulph.

In regard to the geography of the country, I have not only consulted classical authority, and the best modern travellers; but, where I could obtain it, have sought for personal information from those who have been resident in the country. To Mr. Jones I am more especially obliged, who was head of the English factory at Busheer for several years, and afterwards in the same office at Basra. This gentleman, from his knowledge of the Persian language, his connexions and intimacy with the principal persons in power, and his frequent visits to the interior part of the country, is better qualified to decide in points of doubt, than almost any European who has been in Persia; and I ought to add, that, without any previous knowledge of the author, he was as ready, as he was able, to communicate information.

With every assistance, however, that can be obtained, it is not in my power to give the course of the rivers with that correctness I wish; and though d'Anville has performed a great service, in shewing that the rivers of Persia, beyond the mountains, never reach the sea, but are lost in lakes, exhausted upon agriculture, or absorbed by sands; and though he has likewise proved that the rivers, which fall into the gulph, are all derived from the range

³ This is to be understood of places which on an open coast can be ascertained only by have a name and characters. All anchorages measurements (such as it is) and circumstances.

which

which runs parallel with the coast, and forms the back ground of the Kermesir, or hot level country next the sea, he is still undoubtedly mistaken in the course and names he gives to some of those in the upper part of the gulph; and I am not fully furnished with materials to correct his errors. The cause of this lies in the nature of the journals themselves. Of these, I have consulted a great number; but every one of them takes its direction from the point where the author landed, to Schiras, or from Schiras to the coast; and there is not one that goes along the Kermesir below the mountains, nor perhaps ever will be one; for it is a matter of doubt whether any European, except Hephession and the forces he commanded, ever trod the whole extent of this ground; and as this is the only route which could cut the streams from the mountains at right angles, and afford the means of establishing the order in which they succeed, it will be long before this desideratum in geography can be supplied. Pietro della Vallé went from Mina to Lar; but from Lar, north-west to the Arosis or Endian, there is no method of continuing the route but by fragments of routes from Al Edrisi, or by enumerating the principal places which lie in that direction.

I must now return to the fleet, which I left at Badis, that is, in the bay of Jask, in order to conduct it along the coast of Karmania. Badis I have concluded to be either the town of Jask, marked in Baffin's plan and Captain Blair's sketch, or upon the river laid down by Baffin in the bay, about five miles from the head of Jask, if there ever has been a town in that situation. Cutler* has noticed

* Cutler, p. 83, in Dalrymple's Col- to have copied from Baffin; and Thornton not
lection. Thornton, p. 69. *ibid.* Both seem correctly.

this river as a secure harbour for any vessel not drawing more than eleven feet, and here a fleet of Greek gallies might have lain, though, from the shortness of the time Nearchus staid, we ought rather to suppose he rode in the open bay. No day is specified here, but as this was the first place where it was possible to procure a supply, after the distress they had experienced for some time past, it is necessary to allow a day, both for receiving the supply on board, and to give some relief to the people. After weighing, the following day the fleet proceeded fifty miles, and came to an anchor again upon an open coast. This anchorage, as it has no characteristic to distinguish it, but that the cape on the Arabian side of the gulph was in view, I have a right to fix by the measure of the course, if it coincides with a sight of that object. The journal, in fact, gives an hundred miles between Badis' and the river Anamis or Mina; and notwithstanding d'Anville's map gives the same distance between Karpella and the Anamis, there is great reason to suppose that he has both extended the measure between the two, and carried the Anamis nearer to Gomeroon than it ought to be; for his own map of Asia allots only⁵ one degree, while that composed for the memoir allows a degree and an half for the same space. The suspicion on this head is confirmed both by Niebuhr and Pietro della Vallé. Upon reference to the charts it will immediately appear, that there is a cape on the Persian coast, nearly opposite to Mussendon on the Arabian side; and the streight between these two points is exactly the part where the entrance into the gulph is narrowest. It mea-

First station
in KARMA-
NIA.
BADIS.
Dec. 17.
Seventy-
seventh day.

AN OPEN
SHORE.
Dec. 18.
Seventy-
eighth day.

⁵ Both Gronovius and Salmasius, from an error in Pliny, seem to suppose that Badis is the Sabis of Ptolemy and the Sabai of Dionysius; but Sabis is an inland town, and Sabai is in Persis. See Gronovius in loco, p. 347. Salmas. Plin. Ex. 1188.

⁶ See the general map of Asia, first part.

tures here only thirty-four⁷ nautic miles in M'Cluer's chart, and Muffendon is so high as to be visible, not only on the coast opposite, but almost all the way from Karpella. The cape on the Persian side is improperly named Bombareek by M'Cluer, an error he fell into from considering the real Bombareek as Jask: but this cape is the Armozon of Ptolemy, as appears evidently by his series, though it has no name in our English charts on which I can depend. It is in the curve previous to this cape that I fix the present anchorage on an open shore; and in the passage from Badis to this point, the fleet must have passed the Bombareek rock, though no notice is taken of it, nor of Mount Elbourz, not far from which they must have anchored. Bombareek, which is the orthography I adopt, is no otherwise proper than as the term most in use by our navigators; but it passes through a great variety of appellations, all, as I have before observed, corruptions of Cohum-ba-regh⁸, and appears from the sea as is here represented,  in a level plain of loose sand, between two and three miles from the shore, but is not an island, as it is laid down in d'Anville and several of the older⁹ charts. This is the rock which gives name to the cape, and at the cape there is a small creek, but so entirely choked up¹⁰, that it will not admit a boat; it is represented in Commodore Robinson's chart, in the chart com-

⁷ Pliny says, fifty Roman miles. D'Anville makes it about twenty-four miles and an half English. See Plin. lib. vi. c. 23. c. 26. D'Anville Mem. p. 144.

Pliny is nearer the truth than d'Anville chooses to allow. Arrian says, it is a day's sail. Six or seven of the charts before me agree with M'Cluer; and d'Anville hazards

some deductions of importance, if he is mistaken.

⁸ Gombareek, Gombarreek, Gombarat, Bombarack, Bombarick, Mumbarick.

⁹ This has arisen from a deception of the sight when the object was viewed at a distance, and the coast was not high enough to appear.

¹⁰ Lieutenant Porter, Lieutenant Blair.

posed for this work, and in Captain Blair's sketch: if Badis were to be fixed, therefore, at Karpella, this creek must be assumed for the position of the town, but there is no town here at present; and, from the sterile sand in the neighbourhood, it does not appear that a town could exist. This circumstance, added to the insignificance of the creek, contributes to extinguish all idea of fixing Badis here, while an ample bay, a town, and a river, added to the acute angle of the cape at Jask, direct us to prefer that as the true position of Badis.

Mount Elbourz, or Ehours, the Strongylus of Ptolemy, the Round Mountain of Semiramis, as it is called by Marcian, lies, according to Ptolemy, thirty nautic miles north of Karpella. D'Anville gives it nearly the same distance, and Samuel Thornton something more; but it is in my estimation only twenty-four miles, to which if we add twenty-seven from Jask to Karpella, the total is fifty-one miles, differing only one mile from Arrian. My authority for this is the journal of the Houghton East Indiaman", which may possibly reckon from the Bombareek rock rather than the cape. Even in this case, the distance will fall short only eight miles; this is the extent of the difference, and many of the measures on the coast of Karmania will partake of the same deficiency. It may seem extraordinary that such a rock as Bombareek, and a mountain like Elbourz, which had evidently attracted the notice of mariners in the age of Ptolemy, should be passed in silence by the journal; but similar instances are not unfrequent; errors of addition there are none, but omissions have already occurred, and there are some more

" " Mount de Chouse is eight leagues " bareek." Journal of the Houghton,
" to the eastward [northward] of Bom- 1755.

to occur¹² in the course of the navigation: but it is observable, upon more occasions than the present, that a rock, an headland, or a river, however unnoticed, attracts the fleet to an anchorage; and this is probably the case with Elbourz in the instance before us. Arrian seems to consider the gulph of Persia as commencing at a line drawn between Cape Muffendon and the shore where the fleet now rode: and this naturally directs us to Elbourz itself, which Marcian describes as close to Armozon. His language is so precise, that I shall adduce his very words: "Near Armozon¹³ lies the "Round Mountain of Semiramis; opposite to which is Mount "Pasabo in Arabia, and the promontory formed by it: these two "mountains, with their promontories, form the streights at the "entrance of the gulph of Persia." Pasabo is the Sabo and Afabo of Ptolemy, the Muffendon of our modern charts; and Strongylus, or the Round Mountain, is the Elbourz of d'Anville, transformed by our English navigators into Ehowers, Howres, Howse, and Chowse. M'Cluer has very improperly brought Bombareek to this cape and mountain, but I admit his delineation of the coast; and here, attracted by the Strongylus, I bring Nearchus to an anchor. The ancient name of Muffendon¹⁴ is Makæ¹⁵, and Maketa, as well as Afabo, and the cape itself is the termination of a very high and broken island¹⁶, partaking of the nature of a craggy ridge on the continent of Arabia, called the Black Mountains by Ptolemy. These,

¹² The island at Bender-Regh, &c.

¹³ Ἀρμόζοντος ἰν' αὐτὰ παρὰ κενταὶ τὸ
προῖον ἔστιν ὄρος Σιμυράμιδος ὅπερ ἀντικείμενον
ἴσμεν κατὰ τὴν ἰνδαίμονα Ἀραβίαν Πασαβὸν ὄρος
τε καὶ ἀκρωτήριον, ὅπερ ἰκάνισα ὄρη τε καὶ ἀκρωτήρια
τὰ γινώσκουσιν τὸ Περσικὸν κόλπον. Marcian Hudf.

Geog. Min. p. 21.

¹⁴ Written Muffeldom, Muffendom, Mo-
chandan, Moçandan, &c. &c.

¹⁵ Makæ, more properly the people.

¹⁶ M'Cluer, p. 16.

with their adjunct ¹⁷ Afabo, express the Black Mountains of the south ¹⁸; for towards this point they lie in respect to the Arabians, who conferred the title upon them. Several small and rugged islets lie off this cape, called the Coins, from forming the angle of the straits, as I imagine, and the whole presents a frightful appearance, if the delineation of Resfende in the British Museum may be credited.

The sight of Mussendon gave rise to a dispute which renders this anchorage important, for this promontory Onesicritus proposed to explore, with the intention, it should seem, of extending the voyage to the Gulph of Arabia. He asserted that ¹⁹ they were in distress, and likely to be driven about the gulph they were now entering, without knowledge of the coast, or any determinate point to which they might direct their course. Nearchus ²⁰ resisted this proposal with the utmost steadiness; he represented to the council of officers, that Onesicritus appeared ignorant of the design of Alexander, who had not put the people on board because there were no means of conducting them by land; but that his express purpose was, to obtain a knowledge of the coast, with such harbours, bays, and islands as might occur in the course of the voyage; to ascertain

¹⁷ μέλανα ὄρη καλεῖται Ἀσαβῶ. Ptol. p. 154.

¹⁸ Sabo, with the article in Arabic, Af- Sabo. D'Anville Geog. Anc. vol. ii. 228. Sabo signifies South. Bruce, vol. i. p. 381. So in Scripture, the queen of Seba is called the Queen of the South. Mat. xii. 42. Marcian writes the name Pasabo probably by a corruption of the text.

¹⁹ ὡς μὴ κατὰ τὸν κόλπον ἐλαττωδοντας ἰαλαί- πωρεσθαι.

It is not very evident what Onesicritus means; but as Alexander was master of Egypt, he might consider the gulph of Arabia as a sea known to the Egyptians, and more likely to afford them safety or protection than the Gulph of Persia, which had never yet been visited by his countrymen.

²⁰ This dispute is not only detailed in the journal, but recorded in the history, p. 301.

whether

whether there were any towns bordering on the ocean; and whether the country was habitable or desert. He added, that they had now almost obtained the object of their expedition; and that they ought not to hazard the completion of it, by the pursuit of a different design: that the cape in view proved, that the coast below it tended to the south, where the country might be more directly under the influence of the sun, more torrid, parched, and destitute of water; and that, since they had reached the coast of Karmania, they were no longer in despair of support. These were all reasons, he alleged, for pursuing the course they were now in, rather than deviating from it; and if Alexander had completed his expedition by land, there was reasonable ground for hope that a communication with the army might be obtained, when all the dangers they had experienced would be rewarded by the approbation of the king, and the applauses of their countrymen.

This address had its due effect upon the council; the advice of the admiral was adopted; and in this instance, says Arrian, I am persuaded that the success of the expedition, and the preservation of all that had embarked in it, is imputable solely to Nearchus: an encomium to which no one can refuse to subscribe who is acquainted with the coast of Arabia, and considers the total unfitness of the fleet for such a navigation.

Pietro della Vallé, who resided some time at Mina, a town on the river Anamis, in this neighbourhood, has furnished some general circumstances that demand attention; for he not only mentions the river at Mina, which he calls Ibrahim²², and which must be the Anamis, to which the fleet is now directing its course, but notices

²² Probably a Mahometan title from some Imam, or sovereign.

two or three little ports between the present anchorage and Gomeroon; not that they are ports, he adds, but that every village where a vessel can land her cargo, or whence there are a few vessels sent to sea, obtains the name of Bender; and, in this sense, Kuhestek and Bender Ibrahim are ports as well as Bender Abbaffi or Gomeroon. Such a port as this was probably Neoptana, a place which the fleet reached the following day, after a course of forty-four miles; and Bender Ibrahim, the port at the river Ibrahim, or Anamis, seems to occupy the very same ground on which Nearchus formed his naval camp, when he arrived at that river the succeeding day: the distance from Neoptana is stated at about six miles, making in the whole an hundred miles from Badis.

NEOPTANA.
Dec. 10.
Seventy-
ninth day.

ANAMIS
Rive.
Dec. 20.
Eightieth
day.

Upon a review of this distance, I am more confirmed in fixing Badis at Jask, and the first anchorage from thence at Elbourz, for the measure of about fifty miles, comes out consistent both by the journal and our modern accounts; and if the space from Elbourz to the Anamis does not correspond so happily, it must be observed that M. d'Anville has lengthened that distance²² in the map of his memoir, in order to accommodate it to his interpretation of the journal: this at least I suspect, though I cannot find the means of correction, for our English charts are too hydrographical to notice so small a stream, and it must be confessed that the manuscript of Reffende, which was consulted, carries the Obremi, as Ibrahim is there written, much nearer to Ormuz.

The river Anamis is fixed by Arrian in the country of Har-mozeia, an appellation which immediately suggests the resemblance it bears to Harmuz or Hormuz, the celebrated isle of Ormuz, in the

²² The distance is greater in the map constructed for his memoir than in that of *Asie, premiere partie.*

neighbourhood.

neighbourhood. The same title is given to this tract by Ptolemy, of which his Cape Armozon is the boundary; and the means by which the name passed from the continent to the island are common to almost every island in the gulph. This tract is styled Moghostan, or the date country, in Oriental geography, extending to Karpella, or perhaps Jask; and as we are much concerned with the interior part of it, on account of the journey taken by Nearchus from the Anamis, to the encampment of the army, it is fortunate that we have the information of so circumstantial a traveller as Pietro della Vallé to direct our investigation.

Pietro della Vallé was a Roman of noble family, who, after residing some years in Persia, came down from Schiras, with an intention of embarking at Ormuz for the East Indies; but upon his reaching the coast he found the forces of Persia collected, which, with the assistance of the English fleet, were to wrest the possession of this Oriental emporium from the Portuguese. The consequence necessarily was, that all communication with the island was prohibited, and that, in order to avoid the insolence of the soldiery, he kept at a distance from the coast, taking up his abode at Mina, the capital of the district, where he continued during the latter end of the year one thousand six hundred and twenty-one, and the commencement²³ of one thousand six hundred and twenty-two. He had here the misfortune to lose his beloved Maani, a Christian lady, and a Nestorian, whom he had married at Bagdat, and in whose story are interspersed a variety of pathetic²⁴ incidents, painted with

²³ Tom. v. in fine.

²⁴ The writings of Petrarch formed a school of romantic lovers in Italy; and Pietro was an academician of the society called *Humourists*, at Rome. His narrative is often

poetical, and Madam Maani's horse Derviseh is upon a level with Argus, the dog of Ulysses, without the appearance of imitation. Gibbon styles him, not without reason, an author intolerably prolix and vain.

the romantic gallantry of an Italian lover, and surpassing in reality all the lucid fictions of a modern novel. I have not thought it inconsistent with my design to mention these particulars, because the geographical information dependant on them is important. He acquaints us, then, that Mina is the capital of Moghostan, and this its name implies, for Mina²⁵ signifies a fort, and Moghostan is a district of the ancient Karmania, extending from Cape Jask to the north of Gomeroon²⁶: he adds, that the heats are insupportable, and the climate most unhealthy; but a more particular circumstance he notices is, that the river which rises in the neighbourhood falls into the gulph at about two days²⁷ journey from the city, and this river can be no other than the Anamis of Arrian, and the Andanis²⁸ of Ptolemy. If Arrian had followed the inflexion of this word, which I hoped to find in him, we should have read ANA-MINA; but he has written Anamis, and consequently ANA-MIN²⁹. I cannot be persuaded, however, to believe, that there is no connexion between the ancient and modern name, unless it shall hereafter appear that Mina is of a more recent date. The name of Ibrahim, which the river now bears, is evidently a personal derivative, and most probably from the sepulchre of some Mahometan saint in the neighbourhood; but the ancient appellation is consonant to the present usage of mariners, who drop the native names of rivers, and call them from the town in their neighbourhood, as the Busheer river, the Basra river, &c.

²⁵ Gambron, Niebuhr. Combrn, P. della Vallé. Gambroon, Gameroon, &c. &c. Addanius by Hudson, which he supposes may be the Anamis.

²⁶ Mina, Minaw, Minavé. Mina signifies a fort; as Minavé the fort of Basra. ²⁹ Κατὰ τὸν ποταμὸν ANAMIN, p. 348. Another sort of solution would account for ANA. By transposition, ANAMIS is A-

²⁷ From forty to fifty miles.

²⁸ There is in Marcian a Tuanes, rendered MINAS.

I insist the more upon this name, because if Mina was formerly the principal place of the district, as it now is, it points out the reason why Nearchus pitched upon this station in preference to any other for a camp. He had here a communication with an inland town of eminence, from which he might hope to derive some intelligence of the position of the army, and open some means of communication with the king: and as the communication was actually effected afterwards from this very point, it is hardly imputing too much to the intelligence which we may reasonably suppose he obtained upon the coast.

He informs us himself, that he found the natives hospitably disposed, and the country abounding in every kind of supply, but oil. The disembarkation here is expressed in terms of joy, that intimate the previous confinement of the people on board for many days; a grievance almost intolerable, considering the construction³⁰ of a Greek vessel, and a deliverance from which was the greatest of all refreshments. A naval camp was established here immediately, by drawing a line from the river to the beach, and fortified by a double rampart with a mound of earth, and a deep ditch, which seems to have been filled with water from the river. Within this inclosure, the vessels were hauled on shore, and all the proper measures adopted both for their security and repair. It was the intention of the commander to leave his people in this camp, under the com-

³⁰ Ulysses, in all his wanderings, never appears to have slept, *παρὰ πρυμνήσια νῆος*, in the after-part of the ship, when he could find another bed. In Homer's galleys there was an after-deck called *ἱκρίον*, on which the steersman was elevated above the rowers in the wait. *πρυμνήσια* are properly the cables at the stern, but perhaps the after-part of the vessel likewise; whether, when they slept on board, *παρὰ πρυμνήσια*, they slept on the *ἱκρίον* [deck], or under it, does not clearly appear. Either was bad lodging.

mand of proper officers, while he tried himself to obtain an interview with the king : but before we accompany him in this attempt, it will be necessary to consider the country around him with that which he was to penetrate, and the probable site of the Macedonian camp at the time.

It is easy to recognise the name of Ormuz in the Harmozeia of Arrian ; but we are not therefore to suppose, that the local circumstances of both are exactly the same. The present Ormuz is an island known to Nearchus by the name of Organa, and to the subsequent ages by the title of Gerun ; and however fanciful a recurrence to transposition³¹ may be deemed, Oregana converted into O-gerana is probably the medium for uniting them both. The appellation of Ormuz, afterwards given to the island from the neighbouring tract on the continent, is agreeable to an usage prevalent in the gulph of Persia, which we shall have occasion to notice upon other occasions ; and the flight of the inhabitants from the continent to the islands, in cases of oppression or invasion, is to this day a settled practice, as we are assured by Niebuhr³². D'Anville finds two periods, when the Harmozeians on the main might have fled to Gerun, and carried their name with them to their new abode. One in the beginning of the thirteenth century, when Bahud-din, a native chief on the coast, fled from an inroad of the Atabek Turcomans, who about that time established themselves in Pharsistan and Kerman³³ ; and another in the year one thousand two hundred and seventy-three, when the descendants of Gengis-Khan were masters of the Persian empire³⁴. To these two periods I must add

³¹ So Smaragdus is from Zomrud, Zmagd. Bruce, vol. i. p. 207.

³² Persis and Carmania.

³³ See Niebuhr under the head. Abu-Schæhr.

³⁴ Cheref-eddin, vol. ii. p. 418. French edition.

a third: in the year one thousand four hundred and seven³⁵, when Mahomet the son of Timour was sent down from Schiras by his father to this coast, in order to subdue Mahomet Shah, the sovereign of Ormuz, Ormuz was at that time evidently on the continent, for the son of Timour took seven fortresses which were the defence of the Shah's kingdom, and compelled him to fly to Geroum³⁶, exacting even there from him a tribute of six hundred thousand dinars. This transaction proves, that the island was not yet called Ormuz in one thousand four hundred and seven; while it is almost evident that Geroum was the place of retreat for the inhabitants of the continent on these three different occasions; and, according to the observation of Niebuhr just mentioned, this is the custom of the coast. The fluctuation of this word in European orthography justifies much greater liberties in regard to names, than any which occur in this work. Ormus, Ormuz, Ormutz, Hormus, Hormoz, Hormuzd, Harmozeia³⁷, Armozufa, Armoxufa, Armuza, are all applied either to the island or the neighbouring continent, and I conclude have all a derivation common also to Hormisdas, which is Oromasdes or Hormudsch the good principle in the superstition of the Parsees, and a name assumed by several princes of the fourth dynasty, and some of a later date. Mr. d'Anville³⁸ has observed that there are four districts, two on the gulph and two inland, that take their titles from different Per-

³⁵ Really one thousand three hundred and ninety-seven; for there is an error of ten-years in the chronology of Cheref-eddin.

³⁶ Geroum is called by Petis de la Croix in the margin, Gomeroon; but it should rather be the island: not but that Geroum and Gomeroon may be mutually connected, like Ormuz, on the main, and Ormuz the isle.

³⁷ It is worthy of notice, that Alfragani

writes Harmuz with Ptolemy and Arrian. Gol. ad Alfrag. p. 112.

³⁸ Mem. p. 156.

D'Anville derives these divisions from Goliadus ad Alfraganum; but Niebuhr says, no knowledge of such a division now remains. See Gol. Not. ad Alfra. p. 115. Niebuhr, vol. ii. p. 166. French edition.

fian monarchs, Cobad³⁹, Sabur, Darab⁴⁰, and Ardeshir, from Artaxerxes as he is styled in Greek, Cobad, Sapor, and Darab; but, perhaps, if we should judge these rather to have a derivation in common with the name of those kings, than to take a name from them, Armoza may be added as a fifth⁴¹, and related to Hormisdas or Oromasdes by the same connexion. All this is, however, a speculation rather curious than necessary, and our concern is with the tract called Harmozeia by Arrian, Armuza by Ptolemy⁴², and with his Cape Armozon, which Strabo⁴³ has marked precisely as lying at the very point where the strait is narrowest. At this promontory I suppose the district of Arrian to commence; how far it extended towards the north, or whether it comprehended Gomer-oon (Bender-Abbaffi) within its limits, cannot now be determined; but there is sufficient ground to conjecture, that it terminated within the limits of the modern Moghoftan at the river called Rud-siur by Pietro della Vallé, and extended inland to the foot of the mountains. Every where along this coast a range runs in a line at no great distance from the sea, inclosing the Kermesir, a narrow strip of level country rendered hot beyond measure, and unhealthy, from the want of circulation. As Harmozeia was a district of Karmania, in the same manner Laristan⁴⁴ and Moghoftan are, in modern

³⁹ These names seem all to arise from the fourth dynasty of Persian race. Heylin Cosm. lib. iii. To this dynasty, perhaps, all the mythology and all the learning of the Parsees discovered by Anquetil du Perron may be referred.

⁴⁰ Thus Darab-chierd is Dario-certa. Pietro della Vallé, tom. vi. p. 130.

⁴¹ It ought, however, to be noticed that Armozeia is in Karmania, not in Persis.

⁴² Ptol. p. 157.

⁴³ Strab. p. 765.

⁴⁴ Laristan, from Lar, a town much to the westward of Gomer-oon, in the tract below the mountains. Pietro della Vallé retired to Lar, after a severe illness, which ensued upon the death of his wife, and had the good fortune to find there a Persian well skilled in physic. His route, if we were concerned with the interior of the country, is well worth pursuing. See *infra*.

estimation,

estimation, so distinct from Kerman, that the province can hardly be said to commence till you are past the mountains. Moghostan, or the land of dates, by its name implies the means of support, and though the air is unwholesome, according to modern accounts, the soil does not appear to be barren. The whole district was flourishing while the Portuguese maintained their commerce at Ormuz; and Pietro della Vallé, in his time, found an English factory⁴⁵ established at Mina for the purchase of silk. The whole of this coast is desolated at present by the distracted state of Persia; and, according to Niebhur, subject to Arab Scheiks, who have taken advantage of those troubles to pass from the opposite coast, and establish petty governments from Ormuz to Busheer.

At the river Anamis, then, Nearchus took his measures for discovering the situation of the army, and he had the satisfaction to find, upon inquiry, that it had arrived in safety, and was not at a greater distance than five days' journey from the coast. A day's journey is still an Oriental measure, and may vary in its utmost difference from twenty to thirty miles. Taken at a medium, therefore, Alexander was now an hundred and twenty-five miles from the coast; out of this sum, if we be allowed to conduct Nearchus to Mina⁴⁶, we have two days' journey to subtract from our uncertainty, and only seventy-five miles inland from Mina, upon which a doubt would remain. My reason for conducting Nearchus to Mina is not wholly conjectural; for, in the first place, it is the capital of the district, which would naturally attract him; and, in

⁴⁵ Or at least merchants.

⁴⁶ Niebuhr says Mina is only six leagues from the sea; but I depend upon Pietro della Vallé, who resided there some time, and had

frequent occasion to dispatch messengers to the coast: but N. B. Six leagues is the expression of the translator. Niebuhr himself says, some leagues. See French edition, vol. ii. p. 165. the

the next, we actually hear that the commander of the district, upon the arrival of the fleet, flew up to the camp to anticipate the intelligence of its arrival. The seat of empire is subject to the caprice of the monarch in the east, and has frequently been changed; but in the provinces⁴⁷, or subdivision of provinces, the principal town having generally risen from local convenience, is not so much exposed to fluctuation: this induces me to think, that a place like Mina was the ancient capital, as well as the modern. We are, then, to look for Alexander in Karmania, at some convenient spot three days' journey from this town.

We left him at Poora in Gadrosia, which d'Anville⁴⁸ considers justly as the Pureg or Phoreg of the Nubian Geographer, and Arrian calls the capital of the province. The modern capital, according to Cheref-eddin, is Kidge⁴⁹; and d'Anville has another Pohreg⁵⁰, or Forg, on the western side of Karmania, in which he is justified by the Nubian Geographer, if I understand him right,

⁴⁷ In Hindostan, Palibothra, Candage, Agra, and Dehli, have been the seats of empire in different ages: but Lahor has continued unchangeably the head of a province. Ecbatana, Persopolis, and Susa, have all ceded in Persia to Isfahan; but, Candahar, Herat, Balk, Lar, &c. are still principal places.

⁴⁸ Geog. Ancienne, vol. ii. p. 283. written Fahrag, Fohreg, Pohreg, Puhreg, Puregh, Pureh. In all Persian words, p and f are interchangeable. Fars is Persis. G, gh, and h, are all final aspirates, and hardly distinguishable. See Nub. Geog. p. 129.

⁴⁹ Vol. ii. p. 417.

Kidge becomes Kudj; from whence the Kutch of Europeans, and the Kutch Mekran of the Ayeen Akbari; and is sometimes confounded with Tidge, which is upon the

coast. Petis de la Croix, from the historians of Gingsis Khan, mentions that the army of that prince of ravagers almost perished in this province. Pet. de la Croix's Hist. of Gingsis, p. 337. Tiz is a place on the coast in the bay of Churbar, and possibly Petis de la Croix has confounded the two.

Otter says, Kie or Guie, vol. i. p. 408.

⁵⁰ Called Purg or Furg by Pietro de la Vallé, vol. v. p. 361. Less difference would appear in all these names if they were written with the ph instead of the f, which letter, in other Oriental tongues as well as the Hebrew, is the same. D or d, with no other distinction but the point. Phorg, Phoorg, Phooreg, Phooreh, pass easily into Poora, the Greek pronunciation of Πούρα by this method of writing.

and

and by Pietro della Vallé, who was upon the spot. At Poora he was joined by Stafanor and Phrataphernes from the upper provinces, who, divining the difficulties he must have encountered, hastened to his relief with provisions, and a convoy of camels and other beasts; the whole was distributed among the officers and their different troops as far as the supply would extend, and the army proceeded to Karmania as soon as it was recovered from its fatigues. The march was probably a procession of joy and triumph, for the army was not only crowned with victory, but delivered from famine; but that it was a pomp of licence, revelry, and voluptuousness, as painted by Plutarch and Q. Curtius, is a fiction, as Arrian assures us, not supported by Ptolemy, Aristobulus, or any other historian of authority. They both mention the exhibition of games and a solemn sacrifice in gratitude for the deliverance experienced. These were easily magnified into a Bacchanalian procession, by a fertile imagination, and exaggerated on the side of exultation, as much as the distresses in Gadosia had been amplified by terror. That their sufferings were less than they are reported to be, appears from their future transactions; for there is no evidence of extraordinary weakness or diminution, the expeditions proceed as usual, and the future plans daily increase in the magnitude of their object.

If now, therefore, we cast an eye to the map, and consider the situation of Mina⁵¹ and the Gadosian Fohreg, we can hardly be mistaken in drawing a line through Giroft⁵², a town of Karmania, which will stand as a point of union between the fleet and the army. My reason for fixing upon Giroft, or some place in its neighbour-

⁵¹ Mina lies in 26° 35' north latitude, according to Pietro della Vallé, vol. v. p. 397.

It has two castles.

⁵² Djirift of Otter, vol. i. p. 311.

hood lying on the same line, is, because of its agreement with the distance of an hundred and twenty-five miles almost to a fraction⁵³, if d'Anville's map is correct. There is no town in Karmania, either upon this route or near it, except Valase-gerd⁵⁴ or Valase-cherd, which possibly has a better title to antiquity, if we may judge by its termination, for its final syllable is the same, though differently written, with that of Tigrano-certa and Pasa-garda⁵⁵, both ancient cities; the objection to Valase-cherd is, its too great proximity to the coast. Now, it is remarkable that Arrian, Strabo, Plutarch, and Curtius, none of them assign any name to the town where the interview took place, but Diodorus Siculus fixes it at Salmus, and adds, that Nearchus arriving when the king was in the theatre and exhibiting games to the army, he was introduced upon the stage, and requested to relate the account of his voyage to the assembly. Salmus is a name so void of any collateral support, that the learned commentator⁵⁶ of Diodorus abandons it in despair, and I have searched every authority in my possession without finding the most distant similarity of name to fix it. In a case of despair, I offer the following conjecture as a mere speculation (without building in the least upon it) for the amusement, I hope, not for the contempt of the reader:

⁵³ It measures almost, as exactly as the opening of the compasses will give, one hundred and twenty-five miles Roman, of seventy-five to a degree; and this, compared with the road distance, would amount to one hundred and twenty-five miles British, as near as precision itself could demand.

⁵⁴ Written both ways by the Nubian Geographer; where observe, -gerd preserves the relation with Pasa-garda, and -cherd with Tigrano-certa. This termination signifies Fort, Town, or City, like

the modern terms -abad, -patam, -poor, &c. Fat-abad, Jehann-abad, Melia-poor, Masuli-patam, &c.

⁵⁵ Pasa, written Phesa and Besa, which signifies the north-east wind; because it is cooled by that wind in a hot climate. Gol. ad Alfagan, 114.

⁵⁶ Wesseling. ad Diodor. lib. xvii. p. 243. *Σαλμῶντι*. Urbis nomen quam in Carmania fuisse ex Arriano conficias, lib. vi. 28. Ab aliis negligitur.

The Nubian Geographer⁵⁷ mentions MAAUN, a small city, but much frequented by merchants, at one station, or five and twenty miles, distance from Valase-cherd; and it is, I conclude, the same as d'Anville's De-Maum which stands between that town and Giroft. Is it, then, too much to say, that, in the SAL-MOUN-TI of Diodorus, we discover MAAUN? I know not the origin of d'Anville's DE- more than the SAL- of Diodorus; but Sal in Hebrew, and, if I am rightly informed, in Arabic or Persic, has two significations; by one it imports the *shelter* of a tent⁵⁸ or house; by the other, a *rampart*. Would it not then, in either sense, apply? as first, the *camp* at Maaun, and secondly, *Fort* Maaun; or, if it should be said I take advantage of a Greek⁵⁹ inflexion to obtain MOUN-, I must observe, that words of this form, though they have not the letter N in their first appearance, always assume it by inflexion, and have it constantly implied. I give this merely as a speculation, without pretension to Oriental learning; but I am persuaded that an Orientalist who would pursue inquiries of this sort would find his curiosity amply repaid. I shall draw no consequence from it, though I prefer Maaun on this account, but fix the interview at Giroft, in which I adhere to the corresponding distance, and the opinion of d'Anville. If it should hereafter appear that Diodorus has, under such a disguise, preserved the name of this place, he has one offence the less in his barren account of this expedition. Giroft is styled the capital⁶⁰ of Karmania by Petis de la Croix in his commentary on Cheref-eddin; which however it is not, for Seirdgian is the ca-

⁵⁷ P. 130. Canat-Alsciam, hinc ad MAAUN urbem parvam sed commercii minime infrequentem, statio. Ab hac ad urbem Valasegerd, quæ et Valasecherd dicitur, statio.

⁵⁸ סללה, a rampart, from סל, to shade or shelter, as a house or tent. Parkhurst in voce.

⁵⁹ ΣΑΛΜΟΥΣ, pronounced SALMOOS, and formed like Pessinus Pessinuntis, Selinus Selinuntis; written in Latin originally, Pessinuns, Selinuns, and so Σαλμῶν Σαλμῶντος.

⁶⁰ The Nubian Geographer. Giroft autem magna est habetque in longitudine duo fere milliaria, p. 129.

pital: he adds, that it is four days' journey from Ormuz, and lies in latitude⁶¹ 27° 30'. It is noticed by Golius as a large and pleasant place, abounding in corn, fine fruits, and good water, and much frequented by the caravans; it is a place also of such importance, that when Mirza Mehemet, the son of Timour, invaded the kingdom of Ormuz, he made it a post⁶² for his brother, who commanded one of the divisions of the army. According to the Nubian Geographer, there is an inland Hormoz-regis, or Hauz, lying between Phoreg and Giroft⁶³, which would induce a conjecture that, at the time of Mirza Mehemet's invasion, the kingdom of Ormuz extended inland, or originated beyond the mountains, which line the coast; and that the name passed in the first instance from the inland town to the coast, and then from the coast to the island. If this conjecture be founded, it corresponds admirably with Arrian, for Nearchus found no city, but a district called the Harmozeian country, and probably the seat of government was at that period the inland Hormoz, existing as a kingdom or province of Ormuz, nearly in the same manner as in the age of Timour. The march of Mirza Mehemet's army in four divisions, for the invasion of this kingdom, throws⁶⁴ much light on this subject, if it were necessary to pursue it farther. One circumstance, however, must not be omitted, which is, that the position of Giroft depending on the Gadrosian Poora, or Phoreg, it is remarkable that the Nubian Geographer⁶⁵ places Phoreg at the commencement of the great desert which extends to Segestan, and

⁶¹ I believe Petis de la Croix's latitudes are from Abu'lfeda. See Cheref-eddin, vol. ii. p. 418.

⁶² Golias ad Alfraganum, not. p. 118. Distant one day from Harmuz; if so, it is the inland Ormuz.

⁶³ There is an error in the Nubian Geographer, who says, first, that Hormoz is be-

tween Phoreg and Giroft, and afterwards that it is to the west of Giroft, which is impossible. D'Anville has placed Hormoz between the two, and therefore probably read *Orientem* for *Occidentem*, the east for the west.

⁶⁴ Cheref-eddin, vol. ii. p. 417.

⁶⁵ P. 129.

at two hundred and ten miles⁶⁶ distance from the capital of that province. It is the lower part of that desert which Alexander had just passed; and this furnishes an additional proof to the direction of his march, and a stronger reason for conducting it to Giroft instead of Seirdgian the capital, because, if he had inclined to the north, his course would still have been through the same desert.

Upon the arrival of the army in Karmania, intelligence was received that Philip, the new-appointed satrap of India, had been assassinated by the native troops in his pay, and his death revenged by the Macedonians. Eudemus and Taxiles were ordered to take charge of the province till a new satrap should be appointed. Stanor, the satrap of Aria and Drangiana; Pharasmanes, the son of Phrataphernes, satrap of Parthia and Hyrcania; Cleander, Sitalces, and Heracon, with a considerable force, and the army of Parmenio out of Media, all joined Alexander in Karmania, where Cleander and Sitalces, being accused of oppression and sacrilege, were tried and executed. Craterus also arrived with the elephants and heavy baggage, having experienced none of the difficulties in his march through Arachosia and Drangiana⁶⁷, which Alexander had encountered in Gadorfia; and yet by a view of the map, and a reference to the geographers, we can hardly discover the means of his avoiding some part of that desert on the east of Karmania, which the Nubian Geographer says⁶⁸, is the largest in the world. All these circumstances, though foreign to the voyage itself, are necessary to be mentioned at least, because they account for the delay of Alexander in the province, where so much business⁶⁹ appears to

⁶⁶ His account is not clear.

⁶⁷ See d'Anville Geog. Anc. p. 287. vol. ii.

⁶⁸ P. 128.

⁶⁹ At Poora there was also the appointment of Siburtius to the satrapy of Apollophanes, over the Oritæ.

have been transacted, besides the recovery of his troops after the fatigue and distress of their march.

Thus having considered the march of the army and its present position, I shall next examine the dates. Nearchus reached the Anamis on the twentieth of December, and it is no matter of difficulty to shew the correspondence of that date with the movements of the army. It has already been proved that Alexander left Pattala in the end of July, or beginning of August; and before the conclusion of that month, there is sufficient evidence to shew, that he had passed the country of the Arabies and Oritæ, and had entered Gadrosia. The proof of this is, a circumstance mentioned of his encamping in that province, after a distressful march upon the bank of a torrent, which swelled suddenly from rain that had fallen in the mountains, and swept away all the baggage of those who, for the convenience of water, had pitched their tents too near the course of the stream. This fact is recorded both by Strabo and Arrian; and it proves that, though no rain falls in Gadrosia, the solstitial rains were not yet over in the mountains which encircle that province on the north. Now Strabo says, that the rains end about the rising of Arcturus⁷⁰, that is, the second of September; and consequently the army must have been in Gadrosia, and suffered this calamity, in the latter end of August. If, therefore, we add another fact to this, upon the authority of Arrian, that the army was sixty days in passing Gadrosia, we bring its arrival at Poora to the end of October. The business transacted here and in Karmania may reasonably be supposed to have occupied six weeks, to which an additional circum-

⁷⁰ Strabo, p. 691. Usher, from Eusebion, says on the fifth of September. See *Ephemeris de Anno Solar. Maced.*

stance,

stance, not noticed by the historians, must be added, that is, the remounting of the cavalry; for all the horses had perished in the desert. Thus far a comparison of facts would authorise the fixing of a date to the first or second week in December; but we have a positive proof of the season much stronger; for when Alexander, after receiving Nearchus, recommenced his march to the northward, he dispatched Hephæstion, with the greater part of the army, the baggage, and the elephants, to proceed along the sea-coast of Karmania, because it was now WINTER⁷¹, and the climate was there milder⁷², and supplies⁷³ were more easily to be procured: that is, Hephæstion passed the mountains, and traversed the modern Moghistan⁷⁴ and Laristan, or Kermesir, while Alexander, with the remainder of the forces, proceeded inland to the northward of the mountains, and directed his course to Pafagarda. The direct mention of winter in this passage corresponds so precisely with the twentieth of December, which the narrative of the journal produces, that there cannot possibly be an error of more than a few days. Such an error, I have before intimated, must lie on the side of excess; and I am disposed to take off the ten days and fix

⁷¹ Arrian, p. 270.

⁷² ἀλσυνά τε ἦν. See a very long and angry note of Gronobius's upon this word, because Facius and some others had read, ἐλσυνά τε ἦν, *ibid.*

⁷³ If we suppose Hephæstion to have passed the mountains at Mina, which is probable, he marched to Lar the same road by which Pietro de la Vallé was carried sick in a litter to the same town. See vol. v. sub fine.

⁷⁴ Niebuhr says, from Bender Abbassi to Delam; it is an arid plain called Kermesir, or

the hot country, by the Persians. Vol. ii, p. 143. English edition. Pietro de la Vallé confirms this, by mentioning that it seldom rains at Lar, except a little in May. May is the coldest month. Vol. vi. p. 20. et seq. Strabo is very precise in his agreement with Niebuhr, p. 727; for he says, the sea coast along the gulph, as far as the river Oroates, is barren, hot, and exposed to violent winds for three hundred or four hundred stadia inland: from thence, a fine country to the north, for eight thousand stadia!

Nearchus's arrival at the Anamis on the tenth of December, in the year six hundred and twenty-six before the Christian æra, in the eleventh year of the reign of Alexander.

The pleasure of being once more on land, after all the distresses they had experienced, is painted in strong colours by Nearchus⁷⁵; and as they were now in a friendly country, without apprehension either of famine or danger, the people were soon dispersed over the neighbouring tract, either from curiosity, or a desire of supplying their several wants. One of these parties accidentally fell in with a straggler, whose dress⁷⁶ and language discovered him to be a Greek; tears⁷⁷ burst from their eyes upon seeing once more a native of their own country, and hearing once more the sound of their own language. Inquiries commenced with the eagerness natural to their distress, when they learnt that he had not long left the army, and that the camp was at no great distance. They instantly hurried the stranger with all the tumult of joy to Nearchus; in his presence, the same happy discovery was repeated, with assurances that the king was within five days' journey, and that the governor of the province was upon the spot, from whom farther intelligence might be obtained.

⁷⁵ P. 348.

⁷⁶ χλαμύς.

⁷⁷ The classical reader will call to mind the same natural sentiments attributed to Philoctetes by Sophocles, l. 222.

Πόας πάτρας ὑμᾶς ἀν' ἣ γένους ποτὶ

Τύχοιμ' ἀν' ἱσπῶν; σχῆμα μὲν γὰρ Ἑλλάδος

Στολῆς ὑπάρχει προσφιλεστάτης ἡμοῖ.

Φωνῆς δ' ἀκῦσαι βέλομαι.

Of what clime? what race?

Who are ye? Speak; if I may trust that garb,
Familiar once to me, ye are of Greece.

My much-loved country: let me hear the
sound

Of your long-wished for voice.

FRANKLIN.

And afterwards,

Ω φίλτατοι φῶνμα. φεῦ τὸ κ' λαβῶν

Πρόσθεγμα τοῦ δ' ἀνδρὸς ἐν χρόνῳ μακρῷ.

Oh happiness to hear!

After so many years of dreadful silence,

How welcome was that sound!

FRANKLIN.

This

This circumstance of good fortune occurred on the day of their arrival. Nearchus instantly determined to undertake the journey, and the next day ordered the ships to be drawn on shore, and the camp to be fortified. While he was engaged in these transactions, the governor, who was not unacquainted with the anxiety of Alexander on account of the fleet, and thinking to recommend himself by carrying the first intelligence of its arrival, hurried up to the camp by the shortest route, and gaining admittance to the king, informed him that the fleet was safe, and that Nearchus himself was coming up in a few days. The joy of Alexander may be readily conceived, notwithstanding he could scarcely allow himself to give full credit to the report. Impatience succeeded to his doubts; day passed after day without confirmation of the fact; and at length when due allowance had been made, and calculation was exhausted, he dispatched parties different ways in search of Nearchus, either to find him out if he were upon his road, or, if found, to protect him from the natives: but when several of these parties returned without success, concluding the governor's information was a delusion, he ordered him into confinement, not without the severest reproaches for rendering his vexation more acute from the disappointment of his hopes.

In this state of suspense he continued for several days, manifesting by his outward deportment the anguish he suffered in his heart. Nearchus, however, was actually on the road; and, while he was proceeding with Archias and five or six others in his company, fortunately fell in with a party from the army, which had been sent out with horses and carriages for his accommodation. The admiral and his attendants, from their appearance, might have been passed unnoticed. Their hair long and neglected, their garments decayed, their countenance pale and weather-worn, and their persons emaciated
by





APERIAM TERRAS GENTIBUS.



*Drawn & Engraved by W. Bond.
from a scarce coin in the Bodleian Library, Oxford.*

Published April. 5. 1808. by W. Vincent.

THE
PORTRAIT

OF

ALEXANDER,

FROM

A COIN

IN THE BODLEIAN LIBRARY AT OXFORD.

1808.

To MR. JOHN PRICE, principal Librarian of the Bodleian, I am indebted for access to this singular Coin, and the knowledge of its existence in the Winchelsea collection, and with much gratitude I acknowledge his communication of the evidence on which its authenticity is established, and his obliging readiness in permitting it to be engraved.

WILLIAM VINCENT.

Deanry, Westminster,
March 1, 1808.

THE Coin from which this Head of Alexander is engraved, forms part of the Earl of Winchelsea's collection, which was purchased by Mr. Charles Godwyn, Fellow of Balliol College, and by his will bequeathed to the University of Oxford. It is apparently the same as Chaussard's No. 5, mentioned erroneously as brass, in the account of the former engraving. But it is a silver dióbolus, or third of a drachma, nearly the size of an English Threepence, and ought to weigh twenty-two grains², but has received an injury which reduces it to twenty grains and an half. Its value is ten farthings and a third. Haym, in his *Tesoro Britannico*, tom. ii. p. 11. has copied the following description of it from the catalogue of Lord Winchelsea.

"This Coin, which is extremely rare³, is valuable on several accounts, but more particularly as exhibiting a genuine portrait of Alexander, which his Coins in general do not. For they usually represent a Jupiter, a Hercules with, or without⁴ a beard, a Pallas⁵, &c. &c. but that the head on this Coin is a portrait there is little room to doubt. The Diadem and the Horn of Ammon mark the King, and his fictitious descent from that Deity of the desert. Added to which, the singular beauty of the workmanship is a characteristick of the age⁶, rarely equalled, and perhaps never excelled in any other specimen of the art⁷."

"The Lion on the reverse is of the same superiority, it may represent Fortitude or Power, but more probably relates to a dream of Philip's recorded by Plutarch, [and noticed by Tertullian] in

¹ Publicola Chaussard published a French Translation of Arrian in 1802, and gave a Table of Alexander's Coins. At p. 140, he cites Haym, tom. ii. p. 13, and his *Catalogue raisonné*, p. 2, adding, *quoique dans ce dernier on ne trouve point de corne*. Whether Haym's Catalogue differs from his *Tesoro Britannico*, I cannot say, but in the latter he expressly mentions the horn. In Chaussard's plate the horn is wrinkled like that of a ram, in Lord Winchelsea's Coin it is plain. This raises a doubt either in regard to its identity or its accuracy. But it seems intended for the same, and Chaussard bears ample testimony to the beauty of the work, and the fidelity of the portrait, *elle représente le véritable portrait de ce Prince*.

² More accurately $22\frac{1}{2}$ grains.

³ It is not found in the British Museum, or in Dr. Hunter's collection.

⁴ In Mr. Combe's opinion the head of Hercules is never represented with a beard on the coins of Alexander.

⁵ In some of Le Brun's Battles the portrait of Alexander is copied from this head of Pallas.

⁶ Both M. Chaussard, and Mr. Combe of the British Museum, judge the coin to be of later date than the age of Alexander, but both unite in supposing it to be a genuine portrait.

⁷ This extract consists more properly of the substance than the words of Haym.

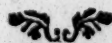
" which he is said to have seen the matrix of Olympias sealed " with the figure of a Lion." Mr. Combe supposes that the Lion refers rather to Hercules, from whom the Kings of Macedon derived their origin.

The present Engraving has been confided to an artist of eminence, and has been submitted during the whole progress of the work to the judgment of Mr. B. West, who has honoured it with his peculiar attention. The opinion of a professional man, whose talents have placed him so deservedly at the head of the British School, may be admitted as decisive upon questions of more importance than the present, and his opinion is this:

" The Features of the face are not those which the ancient Greek " artists gave to their Ideal characters of that Prince, but they " are decidedly done from individual features, delineated from Life, " or a Bust taken from Life They mark a portrait, and that por- " trait cannot be any other but Alexander, in the character of " young Ammon As a work I admire the mind of the artist who " made the Coin, or formed the composition, for his insight into " the harmony of nature It is almost without an example in " its department of art, both in the head, and in the Lion on the re- " verse."

The general testimony of the historians is uniform in assigning a countenance of singular beauty to Alexander, and it is highly probable that in this Coin we have the peculiar traits which characterized this beauty and distinguished it from that of every other person. These several evidences in favour of its originality are still farther confirmed by the concurrent sentiments of Lord Winchelsea, Haym, Chaussard, Mr. Combe, and Mr. West, who all unite in opinion that it is a genuine resemblance of that Prince, whose name is inscribed on the reverse.

⁸ There is another Coin of Alexander in Chaussard's plate, No. 7, which, if I understand it right, is the one commented on by Schlager, de numo Alexandri magni; the character is not very dissimilar from that of No. 5, and Schlager asserts it to be the work of Pyrgoteles, the only artist who was allowed to engrave the resemblance of this Prince. But this assertion is disputed by Chaussard, and the head has neither diadem or horn, the hair is loose and wild.



☞ *The Bookbinder is desired to insert the Plate and the Description of it at page 313, to face Book IV. in the Voyage of Nearchus.*



by famine and fatigue, scarcely roused the attention of the friends they had encountered. They were Greeks, however, and of Greeks it was natural to inquire after the army, and where it was now encamped. An answer was given to their inquiry; but still they were neither recognised by the party, nor was any question asked in return. Just as they were separating from each other, "Assuredly," says Archias, "this must be a party sent out for our relief; for on what other account can they be wandering about the desert? There is nothing strange in their passing us without notice, for our very appearance is a disguise. Let us address them once more, and inform them who we are, and learn from them on what service they are at present employed." Nearchus approved of this advice, and, approaching them again, inquired which way they were directing their course? "We are in search of Nearchus and his people," replied the officer;—and "I am Nearchus," said the admiral; "and this is Archias; take us under your conduct, and we will ourselves report our history to the king." They were accordingly placed in the carriages, and conducted towards the army without delay. While they were upon their progress, some of the horsemen, impatient to carry the news of this happy event, set off for the camp to inform the king, that Nearchus and Archias were arrived, with five or six attendants, but of the rest they had no intelligence. This suggested to Alexander, that perhaps these only were preserved, and that the rest of the people had perished, either by famine or shipwreck; nor did he feel so much pleasure in the preservation of the few, as distress for the loss of the remainder. During this interval, Nearchus and his attendants arrived. It was not without difficulty that the king discovered who they were, under the disguise of their appearance; and

this circumstance contributed to confirm him in his mistake, imagining that both their persons and their dress bespoke shipwreck, and the destruction of the fleet. He held out his hand however to Nearchus, and led him aside from his guards and attendants, without being able to utter a word; as soon as they were alone, he burst into tears, and continued weeping for a considerable time; till at length recovering, in some degree, his composure, "Nearchus," says he, "I feel some satisfaction in finding that you and Archias have escaped; but tell me where, and in what manner, did my fleet and my people perish?" "Your fleet," replied Nearchus, "is all safe, your people are safe, and we are come to bring you the account of their preservation." Tears, but from a different source, now fell much faster from his eyes; "Where, then, are my ships?" says he. "At the Anamis," replied Nearchus: "all safe on shore, and preparing for the completion of their voyage." "By the Libyan Ammon, and the Jupiter of Greece, I swear to you," rejoined the king, "that I am more happy at receiving this intelligence, than in being the conqueror of all Asia; for I should have considered the loss of my fleet, and the failure of this expedition, as a counterbalance to all the glory I have acquired."—Such was the reception of the admiral, while the governor, who was the first bearer of the glad tidings, was still in bonds: upon the sight of Nearchus, he fell at his feet and implored his intercession. It may be well imagined that his pardon was as readily granted as it was asked.

The joy was now universal through the army; a solemn sacrifice was proclaimed in honour of Jupiter the preserver, of Hercules, of Apollo the averter of destruction, of Neptune, and every deity of the ocean: the games were celebrated, and a splendid procession exhibited,

exhibited, in which Nearchus was the principal ornament of the pomp, and the object which claimed the attention of every eye. Flowers and chaplets were wreathed for his head, and showered upon him by the grateful multitude, while the success of his enterprise was proclaimed by their acclamations, and celebrated in their songs. At the conclusion of the festival, the king informed Nearchus, that he should no longer expose him to the hazard of the sea, but send down some other officer to conduct the fleet to Susa. "I am bound to obey you," replied the admiral, "as my king, and I take a pleasure in my obedience; but if you wish to gratify me in return, suffer me to retain my command, till I have completed the expedition. I shall feel it as an injustice, if, after having struggled through all the difficulties of the voyage, another shall finish the remainder almost without an effort, and yet reap the honour of completing what I have begun." Alexander, scarcely permitting him to conclude his request, granted all that he desired, and sent him down again to the coast, with a small escort; not supposing that there was any danger in the neighbourhood of the army, or in a country which seemed to be sufficiently subdued: but in this he was mistaken; the Karmanians resented the deposition⁷⁸ of their satrap, and had in consequence taken up arms, and seized some of the strong places in the province; while Tlepolemus the new-appointed governor had not yet had time to establish his authority. It happened, therefore, that Nearchus encountered two or three parties of the insurgents on his march, and reached his destination at last, not without considerable diffi-

⁷⁸ See a note of Gronovius's upon *τιτιδου* does not mean "put to death," but "deposed," p. 352. on this passage; who proves, that it

culty. Upon joining again the companions of his voyage, he sacrificed to Jupiter the preserver, and exhibited the usual games⁷⁹ for his success.

The interview of Alexander and Nearchus needs no comment; but I cannot set the fleet afloat again till I have observed, that there is nothing in the original to contradict the conjecture I have made, that Nearchus took the route of Mina to cross the mountains, in his way to Giroft; that he had passed them, and was on his fifth day's journey, when he met with the party which conducted him to the army; and that the enemy he encountered on his return were probably straggling bodies who had secured themselves in the passes above Mina⁸⁰; it appears likewise that the strong posts they had seized were in the same part of the country, and perhaps occupied with a view of intercepting the communication between the army and the coast.

By rescinding ten days from the journal, I brought the fleet to the Anamis on the tenth of December; and if we allow Nearchus to have set out on the thirteenth for the camp, ten days for his journey, and three days for his continuance there, brings our account to the twenty-sixth: he did not, however, sail immediately on his return; his sacrifice and his games occupied one day at least; the

⁷⁹ The king celebrated an ἀγὼν μουσικὸν καὶ γυμνικόν; Nearchus's was only γυμνικόν. The μουσικόν, or trial of mental talents, seems always to have made a part of Alexander's games; the γυμνικόν, that is, the trial of bodily strength, or address, was suitable to the situation of Nearchus; he had probably no μουσικοί, bards, orators, or musicians in his company.

⁸⁰ Niebuhr writes this name Minau; and says it is some leagues from the coast. He did not visit it; and therefore his distance

must be from report. Vol. ii. p. 142. Eng. edition. But I have no direct authority for fixing either Mina or the Anamis precisely. If d'Anville is correct, the site I give for the river is too much towards the south; and if I am mistaken, the measures of Arrian mislead me. His error, if proved, must lie between Neoptana and the Anamis. Some of our English officers who have been at Gomeroon must be able to determine the position of the river Ibrahim.

launching of his vessels and preparation for sailing may be supposed to employ two more; so that there can be no material error in assuming a date of some importance, the first of January in the year three hundred and twenty-five A. C. for his departure from the Anamis. We may conclude, also, that Alexander and Hephæstion proceeded on their separate routes⁸¹ a few days previous to this date; and this supposition will be sufficient to justify Arrian's assertion, that the march of Hephæstion commenced in WINTER.

The fleet is now to take a new departure with the commencement of the new year; and the first day's progress is nearly nineteen miles, to the island of Oaracta; in the course of which, a desert island was seen called Organa, the celebrated Ormuz of modern geography. Slight as the mention of this place is in the journal, it would be inexcusable to pass in silence one of the most extraordinary marts of commerce in the world. Oaracta is the modern Kismis⁸²; between which and the Mina river, or Anamis, lie two small islands called Ormuz and Arek: the latter is usually written L'Arek⁸³, with the article; it is not mentioned by Arrian; and, upon consulting the map, it will immediately appear that the course of a Greek fleet would necessarily lead to Organa, or Ormuz, which is nearest the coast, rather than to L'Arek, which is the more distant. They are all three mentioned by Ptolemy; but with so much confusion, that some ingenuity is requisite to develop them. Mercator's chart⁸⁴ exhibits a Tylos and Arathos⁸⁵ towards the entrance of

OARACTA
ISLAND.
January 1.
A. 325.
First station.

⁸¹ These two routes join again, according to Pietro della Vallé, within a short distance from the modern Schiraz. Vol. v. p. 351.

⁸² Dsjism, Dsjes, Drâs, of Niebuhr. Kismis, Khesem, written Queixomo of the Portuguese.

⁸³ Larefsdj of Niebuhr.

⁸⁴ Tab. vi. Asia.

⁸⁵ The Tyros and Aradus of other authors. Dionysius Per. They are in reality the islands of Bahrein, however misplaced.

the gulph, intended for two small islands, but transposed to the coast of Arabia⁸⁶; and an Aracca, or Island of Alexander, far to the north. I shall first account for this variation of names. Salmasius⁸⁷ says, that Arrian is mistaken in placing the tomb of Erythras, a king who gave name to the Erythræan Sea, in Oaracta; for other authors allot it to Ogyris, the smaller island; and Ogyris, he informs us, is the Organa of Arrian.

Unfortunately, modern scepticism has destroyed the credit of King Erythras. It is now an opinion generally received, that the Red Sea is the Idumæan Sea, or Gulph of Arabia, taking its name from Edom⁸⁸, or Esau, the Arabian patriarch; and Edom signifies *red*⁸⁹. The Arabians were doubtless the first navigators of the Indian ocean, and as they entered that sea by passing the straits of Bab-el-mandeb⁹⁰, they carried the name of the Red Sea, from whence they commenced⁹¹ their course to the utmost extent of their discoveries. Hence the Indian Ocean received the title of Red; and the Greeks,

⁸⁶ The error is not Mercator's. He places them according to the longitude and latitude of Ptolemy.

⁸⁷ Plin. Exercit. p. 1180. et seq.

⁸⁸ אֶדוֹם. Edom Hebraicè rubrum significat ut testatur Moses. Genes. xxv. 30. Nec vero est absimile quod hodie docti contendunt mare Rubrum inde esse dictum. Nam à mari Rubro allui terram Edom vel ex Scriptura compertum. Vid. i. Reg. ix. 26. דָּם. Sanguis ab אֶדוֹם per aphæresin. Bochart, vol. i. p. 769.

King Solomon made a navy of ships in Ezion Geber, which is beside Eloth, on the shore of the Red Sea, in the land of Edom. יַם סוּף. *The weedy Sea* is the term here used to express the Red Sea, and appears properly applied by the account of other authors. See Parkhurst in voce. But there is another

derivation, signifying an *end* or *extremity*; and perhaps, therefore, Im-suph may mean one of the heads or bays of the Red Sea, as divided into two parts at its northern extremity. See Questions of Michaelis. Niebuhr.

⁸⁹ The Arabs, or at least the Orientals, delight in these appellations. Thus, the Euxine is the *Black Sea*, the Propontis is the *White Sea*, the Mediterranean is the *Blue Sea*, and the Indian Ocean the *Green Sea*.

⁹⁰ The gate of death, or mourning. Cosmas Indicopleustes, though he gives an account of Ceylon, seems never to have passed this strait.

⁹¹ I cannot cite my authority, but I know there is evidence to prove, that the vast country of Siberia derives its name from a village called Siberia; near which the Russians first entered that country.

who translated every thing rather than introduce a foreign word, made it the Erythræan Sea. Not contented, however, with this, they usually found a god, a hero, or a king, whose name or story must be connected with the derivation; and hence we have Erythras for the present purpose. But neither Arrian nor his countrymen ever considered that Erythras, in order to give his name to the Erythræan Sea, ought⁹² to have reigned, or to have been buried, somewhere on the Gulph of Arabia; for that is the original Red Sea, and the source of that name, which was afterwards applied to so large an extent. Without respect, therefore, to Erythras, the utmost we can suppose is, that there was a tomb on this desert island visited by the natives of the coast; a superstition prevalent all over the East from the earliest ages, and still in full vigour, as well among the Mahometans as the other casts. Ogyris, therefore, we will assume, as one of the names of Organa, from Dionysius⁹³ Periegetes; Tyrine as a second, from Strabo, Pliny, and Philostratus⁹⁴; and Turun as a third, which is a title of the moderns. Now it is remarkable, that Vossius proposes to read the Tyrine of Strabo either O-Gyrine⁹⁵, or Gyrine simply, to make out a correspondence between the two; and I have before ventured a conjecture, that the Organa of Arrian should have its syllables transposed, by reading

⁹² It is not meant to assert, that the Gulph of Persia is not comprehended in the general title Erythræan.

⁹³ D'Anville Dissert. p. 147.

⁹⁴ Philostratus is here quoted from d'Anville; but he has not been neglected, though little was obtainable from his account. Whoever will take the trouble to refer to that work,

will find that Apollonius, or his historian, has built that part of his novel which relates to India, entirely on the accounts of the Macedonians. He enters India by the same route, and returns by the same; and from this line the author did not dare to depart.

⁹⁵ Ὀ-Γυρίνη, or, Γυρίνη, for ΤΥΡΙΝΗΝ. See d'Anville, *ibid*.

O-G'rana⁹⁶, or O-Gerana. Thus it is evident that Gerun, the name of the island previous to its taking the name of Ormuz, is a native title as early as the days of Alexander; presenting, under one form, Gyrene and O-Gerana, and under another, that of Djerun, Tyrine, and Turun⁹⁷, by the change of d into t. The palace of the kings of Ormuz on this island was called Turun-baque, as d'Anville informs us; which, if written Turun-bach or Turun-bah, might be rendered *the garden of Turun*⁹⁸; and Turun is no more than the name of the prince, derived⁹⁹ from the place of his residence, Turun, Tyrine, Djerun, Gerun; a practice universal in the East. Salmasius does not appear to know any thing of the modern Arek, and therefore confounds it with Oaracta; and the same prevalent confusion among authors has turned Tyrine into Tyros and Tylos¹⁰⁰, Aracca into Aradus and Arathos: hence it is, that the names of Tyrus and Aradus have been transplanted from Phœnicia¹⁰¹, on the

⁹⁶ Strangely as these transpositions may appear to a classical eye, the reality of them is universal almost in Oriental names; whether from the ignorance of the natives, or the mistake of inquirers, is dubious. Astrakan is by the inhabitants pronounced Afstarchan, by the Persians Agitarcan, P. della Vallé, tom. iii. p. 205.

⁹⁷ So Tfor, Turus, Tyrus; and Sor, Sour, Sarr-anus; see *infra* Tarsia. See Michaelis's Extract from Niebuhr, p. 34.

⁹⁸ D'Anville mentions a Turun Shah, who was an historian. Turun Shah is king of Djerun. He wrote a history of Ormus, translated by Texeira into Portuguese; by him called Torunda. Dalrymple.

⁹⁹ Thus Taxiles from Taxila, Porus from Lo-Pore.

¹⁰⁰ Tylos, in Arrian, p. 301, is the modern Bahrein, where the pearl-fishery is established on the Arabian side of the gulph, and as such d'Anville considers it in his ancient geography: but Ptolemy's Tylos is in the latitude of Ormus; and, though carried to the Arabian side, manifestly confounded with Tyrine, or Gerun. If he has any thing like Bahrain, it is Ichara.

¹⁰¹ Strabo says, Tyrus and Aradus are ten days' sail from Teredon, and one from Macæ. Mr. Gosselin makes a pleasant supposition, that they are ten days' sail from Macæ and one from Gerra. *Geog. des Grecs*, p. 28. This is not a mistake, but an hypothesis. See another equally bold, p. 53.

Mediterranean, into the Gulph¹⁰² of Persia, as if mariners¹⁰³ brought from thence had carried the names of their country with them. There is, in fact, a double error, for the Tylos of Arrian¹⁰⁴ is undoubtedly the largest of the Pearl islands, now called Bahrein¹⁰⁵, and one of the smaller is named Arâd by Niebuhr¹⁰⁶ at the present hour. This Tylos and this Arâd give the Tyrus¹⁰⁷ and Aradus of Strabo, the Tylos and Arathus of Ptolemy however misplaced, and both seem to have been brought down to the mouth of the Gulph by an accumulated confusion with Tyrine and Aracca¹⁰⁸, the modern Ormuz and L'Arek. The site assigned by Strabo, and the latitudes of Ptolemy, will prove this assertion as clearly as the distorted map of Mercator, and the error of Strabo in deducing the Tyrians¹⁰⁹ and Aradians of the Mediterranean from these islands in the Gulph of Persia, is consonant to the perpetual vanity of the Greeks who reduce every thing unknown to the standard of their own fabulous history.

The island of Ormuz is a barren rock, evidently formed by a volcano, the vestiges of which still remain on a mountain, which ex-

¹⁰² There are different positions assigned to these two islands by different authors, Eustathius, &c.: but a view of Mercator's map, tab. vi. Asia, shews at one view the source of the error. Aracca, Ptol. p. 149. *Tylus, Aradus*, p. 156. in the margin, *Tyrus, Arathos*, islands in the Gulph of Persia. If farther information is required, I refer to Salmasius, p. 1180:—a very long and uninteresting dissertation, with much learning and many errors: he consulted every thing but modern authority; and that alone could have set him right.

¹⁰³ Strabo supposes exactly the reverse, p. 766. and p. 784.

¹⁰⁴ See Arrian, p. 301.

¹⁰⁵ Bahrein is the Ichara of Ptolemy. Oforius, vol. ii. p. 329.

¹⁰⁶ See his map of the Gulph.

¹⁰⁷ *Liquidas r et l omnes sciunt esse maximè permutabiles.* Bochart. Phal. p. 689.

¹⁰⁸ Ptolemy's Aracca is near Busheer, and is possibly the Ara or L'Ara of d'Anville, the Schitwar of the English charts, still misplaced.

¹⁰⁹ Tyre is from Tfor, Tor, Tur. And Michaelis's Extract from Niebuhr, p. 34. says, Niebuhr found a Tor in the Gulph of Persia, of importance to geography. I cannot find it in Niebuhr, as Michaelis quotes from the German edition.

tends from one end of the island to the other; the soil is a white salt, hard enough to be used for building; the fort and the houses were constructed of no other materials; there is no spring or water but such as is saved from rain, and rain falls seldom; no plant or vegetable, but a few at the king's palace^{***}, set in earth, brought from the continent; and the Portuguese, to secure a supply of water, were constrained to maintain a fort on Kismis; the heat is intolerable; in summer the inhabitants lie plunged in water, for many hours; in winter they sleep on the terrace of the house in the open air. Yet even here could commerce fix her seat, and the Portuguese who took it under Albuquerque, in the year one thousand five hundred and seven, kept possession till one thousand six hundred and twenty-two, when it was again reduced under the power of Persia by Abbas the Great, with the assistance of the English fleet. It had, from the convenience of its situation, become, in the hands of the Portuguese, an emporium second to none but Goa; and it is remarkable that they preserved the race of native kings from the same policy which has made the English support the nominal princes in Bengal, and on the coast of Coromandel. When the place was taken, the last king was conveyed as a prisoner up to Isparhan through Lar, at the time Pietro della Vallé was resident in that city. He had the generosity to communicate his kind wishes to the unfortunate prince, and visiting Ormuz himself a few months afterwards, bears testimony to the bravery of the Portuguese in its defence. Abbas intended to annihilate the city, and transplant the commerce to Gomeroon, which

^{***} The king's palace was on the south-west side of the island with the garden Turun-bach, noticed before. D'Anville mentions a Turun-Shah, or king of Ormus, who was an

historian. His history, I understand, has been translated into Portuguese by Texeira. Dalrymple,

he thenceforth styled Bender-Abbassi, the port of Abbas; but he broke his faith with the English, who were to have had half the produce of the duties for their assistance, and Bender-Abbassi soon became deserted from the usual oppression of the government. While Ormuz was the seat of commerce, it invigorated all that part of the Persian empire which borders on the Gulph; and however its fall impaired the power of the Portuguese, its conquerors gained nothing by their success: the English commerce declined till they almost abandoned it from disgust, and the neighbouring provinces of Persia sunk under their natural aridity. A few vessels still continue to frequent the Gulph from the settlements in India, but the trade is of no very great importance. In the ruin of Persia, since the death of Nadir, a Persian, with the title of Mulla Ali Shah, is master of Ormuz, as Niebuhr informs us; but his residence seems to be at Gomeroon, as I collect from the journal of the Houghton Indian, which mentions a similar name at that city¹¹¹. This is the last account I find of this once celebrated spot; and in this situation it is likely to continue, unless the Persian empire should again revive, of which there seems no immediate prospect.

Ormuz has two safe ports, one on the east and the other on the west side; it is three leagues from the coast of Persia, and three or four in circuit. Mr. d'Anville says it is less than L'Arek¹¹²; but all our English charts represent it larger; and as M'Cluer visited both, his testimony has great weight. According to Dalrymple¹¹³, its

¹¹¹ That journal is dated one thousand seven hundred and fifty-five; and Niebuhr was in Persia nine or ten years afterwards. If it is the same man, he has had a long reign, considering the time he lived in.

¹¹² L'Arek is one league and a half from Ormuz. Cutler, p. 85. Dalrymple's Collection.

¹¹³ P. 38.

latitude is $27^{\circ} 4' 22''$ north. The best ¹¹⁴ passage is between Örmuz and the main, and by this I conclude Nearchus failed, not only from its safety, but because he kept the shore in view. In his time Örmuz was without inhabitants as L'Arek ¹¹⁵ is at present, unless when frequented by parties of Arabs, who make it a station both for fishing and piracy. Here also, among other places of sepulture, the tomb of Erythras is sometimes fixed; and however the island itself may be displaced, the name of Aracha and Arakia ¹¹⁶ is preserved by Pliny and Ptolemy. It is a little strange that Pietro della Vallé ¹¹⁷, who made a tour to this spot, mentions sepultures, not indeed of kings but former inhabitants; and all these islands being subject to the depredations of Arabs from one shore, or Persians from the other, it is highly probable, as they afford also asylums for any chief or tribe oppressed on either side, that they are both occupied and deserted occasionally. The tombs also of most eastern nations being built of materials more durable than their houses, places of sepulture would of course present themselves to all who landed on a deserted spot. Such may be the origin of the mythology concerning the tomb of Erythras; and the sight of tombs in various islands may have caused different voyagers to attribute it to different places. I should indeed carry Erythras and the tradition concerning him to the westward of Oaracta, instead of the east; for there are two islets there called to this day Great Tomb ¹¹⁸ and Little Tomb, and if these are Portuguese names, there will be reason to suppose,

¹¹⁴ Cutler, p. 85.

¹¹⁵ Pietro della Vallé mentions that the Captain of the English vessel on board which he sailed, sent his boat ashore at L'Arek with dogs, which returned loaded with game and goats. We shall find Arrian mention

goats on the desert islets of the Gulph.

¹¹⁶ Salmasius very rashly converts both names into Oaracta. 1180. Plin. Exer.

¹¹⁷ Tom. vi. p. 232.

¹¹⁸ I am ignorant of the etymology. Niebuhr writes Tunb.

that

that the tradition of a tomb erected to some hero, king, or saint, continued down to the age of the Portuguese discoveries.

By viewing the island L'Arek in the different charts, sufficient reason appears why it is not noticed by Arrian; for as the course of the fleet is directed round Ormuz, and confined to somewhat less than nineteen miles, it necessarily terminates at the eastern point of Kismis, without notice of L'Arek. Mr. d'Anville supposes two anchorages, including one at Bender-Ser, previous to the arrival at Kismis; but the distance in his own map requires no great allowance to be made, and the general measure specified by the others is more favourable to the estimation I have assumed.

The Oaracta of Arrian is written Ouoroctha or Woroctha by Ptolemy, being thus united with the Wroct or Vroct¹¹⁹ of the moderns; and Oracla¹²⁰, which is the older reading in Pliny, is as manifestly a corruption of the same, as the Doracta¹²¹ of Strabo, however distorted from a different cause. The modern name is Kismis, varied by a multiplicity¹²² of orthography, and deriving its meaning possibly from the Persian, in which language Kismis signifies small grapes¹²³ without stones, for the island is mentioned by Arrian as affording the fruit of the vine, and vessels from different parts of the Gulph still lade raisins in its ports. Niebuhr has added a name that throws every other at a distance, Dsjesîret

OARACTA.
Ninety-
second day.
January 1.
Anno 625.

¹¹⁹ I do not find d'Anville's authority for the modern name, but suppose it to be Oriental.

¹²⁰ The commentators who knew nothing of Oracla corrected it Organa, which was known; but never was a more unfortunate addition than what follows in Pliny. *Organa habitatur*

tantum, aquosa. See d'Anville.

¹²¹ See Strabo, 767. Salmas, 1180.

¹²² Kefem, P. della Vallé; Kishmee, Kishma, Kishmich, Queixomo. Portug. &c. &c.

¹²³ Thevenot, part ii. p. 69. Eng. edit. Their officinal name in England is Sultana, or Sultanic grapes.

Drâs¹²⁴; and though we see that he expresses Kismee by Dsjesme, we are at a loss for the final Drâs, and should have been obliged to the Oriental scholar for an etymology.

The point of Kismis, which we suppose the fleet to have reached, cannot be far distant from a fort occupied by the Portuguese while masters of Ormuz, which was necessary for supplying them with water, and which they defended bravely, under the command of Rui Freira, against the forces of Persia, till the English¹²⁵ joined in the attack with their artillery. The officer in command here, when Nearchus arrived, was Mazenes¹²⁶, a Persian, who offered himself voluntarily to take charge of the pilotage, and upon the acceptance of his services he came on board, and did not quit the fleet till after its arrival at the Pasitigris.

CHARACT.
Second
Anchorage.
Ninety-third
day.
January 2.
Day allowed.

No distance suits less than the following course from this point to a second anchorage in the same island, which from mention of an islet in the offing must be the Angar or Angan of our modern charts, and requires a course of almost thirty miles, while the journal allows but twelve and a half; and this is the more extraordinary, as the measure of two miles and a half given for the distance between Angar and the coast, is as correct as the corrected chart of McCluer. This islet, as the journal informs us, was inaccessible, and sacred to Neptune; inaccessible, perhaps, from some native superstition, like

¹²⁴ Dsjesîret Drâs is the Persian name. Dsjesîret Tauîle, Arabian. It is called Loft or Left by some Europeans, from a town of that name; and Kismee by others, from Dsjisme, another town. Niebuhr, vol. ii. p. 185. French. ed. Amsterd. ed. Arabie, p. 268.

¹²⁵ In the year one thousand six hundred and twenty-one, and when P. della Vallé was

here the following year, he was well received by the English, who caroused all night, and formed a hunting party for him the next day, on the island of L'Arek.

¹²⁶ Called Amazenes by Strabo, p. 767. sufficiently confuting his own assertion, p. 732.; where he makes Nearchus say, he had no guide: but the passage is suspected.

that attending the retreat of the Nereid in the Indian Ocean, and sacred to Neptune in a sense we do not understand. The Greeks attributed the names of their own deities to those of other nations, adorned with similar symbols; and as there is a pagoda¹²⁷ on this spot at present, it is by no means impossible that the representations on its walls, if antique, might still unravel the superstition alluded to in the Greek Neptune¹²⁸.

Nearchus makes the island of Oaracta fifty¹²⁹ miles long, which Mr. d'Anville considers as specifying that part of the coast only which was passed by the fleet; but this solution is not justified by the text, and in reality no great allowance is necessary, the charts make it short of a degree, and a circumstance which occurred on departing from Angar, prevented the western extremity from being noticed: we might rather have expected, perhaps, that the fleet should have navigated the channel between Kismis and the main, than stand out to the southward of the island in the open sea; and such a course as this we have seen preferred upon approaching the river Arabis; but by making the eastern point of Kismis, it appears as if Nearchus was in doubt which route he should prefer, and was determined in his choice by procuring the assistance of Mazenes.

There is still a passage open between Kismis and the main, though little used, and between Angar and Kismis. Angar¹³⁰ has good water, with plenty of wild sheep and goats, as several of these islets seem to have, for the supply of mariners, fishermen, and pirates. We shall hereafter find one specified by Arrian, under the protection of Mercury and Venus, and possibly both the goddess

¹²⁷ McCluer, Lieut. Cant.

¹²⁸ In reality Poseidon; for Neptune is an Italian deity.

¹²⁹ Eight hundred stadia.

¹³⁰ McCluer, p. 17. Dalrymple's Preface, p. 11. The isle is a league in length.

and

and Neptune were presiding deities, who preserved the animals landed on these spots, till the breed was established. Both the bay in which Angar lies, and the isle itself, are vaguely defined; but the second chart of M'Cluer is probably correct.

No day is specified before their departure from the anchorage at Angar, but I allow one here, as in the former part of the voyage, and leave the correction, if any error should arise, to the conclusion of the narrative.

—
An Island.
January 3.
Ninety-
fourth day.
GREAT
TOMBO.
—

Weighing from Angar, the fleet proceeded, apparently, with an intention to double the western end of Kismis, and return upon the coast of the main; but having failed too late on the tide of ebb, three of the galleys grounded on a shoal of Baffidu, which runs out from the western point of Kismis, and were so long detained, that they did not join the rest of the fleet till two days after. In consequence of this accident, such of the vessels as were not so near the shore, or so far involved in the difficulty, drew off to the south-westward, and extricating¹³¹ themselves from the shoal with great exertion, got once more into deep water.

A glance at the chart will prove the correctness of the journal in this instance better than discussion; for they got on shore by standing too much to the north-east, and escaped by hawling off in an opposite direction. This brought them, contrary to their intention, to the isle at present called Great Tomb, or Tumbo, after a course of

¹³¹ χαλεπῶς διεκπλῶσαι τὰς ΠΗΧΙΑΣ, ἰς τὰ βάθη διαπεσώθησαν, p. 353; *è rupicosis locis enavigantes*; potius, *è brevibus*.

I have already sufficiently noticed the perpetual error of the translators in regard to *πήχιας*.

It is evidently in this instance opposed to *βάθη*; and, what is still a greater confirmation, we have this shoal laid down in all our charts as a sand, and not as rocky or broken ground.

forty miles, which marks the distance ¹³² as nearly just as it could be fixed by observation.

Another distance is given of about nineteen miles from the continent, which does not correspond; for the nearest part of the main measures thirty-five miles; but if we take the space between the western end of Kismis and Great Tumbo, it is as exactly nineteen miles as the opening of the compasses will give; and it is reasonable to estimate Kismis as continent in respect to such an islet as Tumbo.

The two islets called Tumbo ¹³³, if the appellation is Portuguese, have doubtless some allusion to a sepulture, either ancient or modern, and possibly some Marabout, or Imam, is revered here, as a successor either to an Hindoo saint or deity, or even Erythras himself. Such successors to the deities of Rome and Greece we find in the Roman catholic countries; and such, as it is said, are not unfrequent in the East.

The Great Tumbo is described as an isle one league in length, from east to west, with half that extent in breadth; it is resorted to by Arabs who come to fish, and has a sandy bay to the eastward, where the landing is convenient. Water, and probably goats, may be procured here; but it is uninhabited, and remarkable for a shoal running out six or seven miles to the southward; its latitude is $26^{\circ} 12' 13''$, or, as corrected by Mr. Dalrymple, $26^{\circ} 24' 17''$.

The following morning the fleet, after weighing, directed its course towards the main; and a view of the shoal off Kismis on

¹³² The first is also called Naze, and the second is Nabgion, Nabgian, Nabejou, &c. Namin by Niebuhr. thetically of the two Tombs. Niebuhr writes them Tunb.

¹³³ It is to be understood that I speak hypothetically of the two Tombs. Lieutenant M'Cluer, from Lieutenant Cant, p. 40.

—
SIDODONE.
January 4.
Ninety-fifth
day.
SISIDONE
of Grono-
vius.
—

the right, with the island Polior on the left, direct us evidently into the bay formed by Cape Sertes on the east, and Cape Buftion on the west, in the first chart of M'Cluer. Other charts transpose these capes, as Mr. d'Anville has done, for his Buftion, both town and cape are on the eastern point of the bay, and his Gherd [the Certes or Sertes of our English charts] is on the western extremity. A variety of the authorities before me place a town on the eastern promontory, and, whatever its name be, here I place the Sidodone of the journal. In this I am directed principally by the shoal off Basidu, or Bassadore, at the western extremity of Kismis; for if it is natural that a Greek fleet should seek the coast again as soon as it was clear of the island, and had pursued a course the day before for that purpose, till deterred by the shoal; it is plain, the same object was in view upon departing from Tumbo, and that the course pointed as directly to the main as the extremity of the shoal would allow. On this shoal there is one observation worth recording; which is, that according to the instructions given to the English officers who navigate the gulph, "the shoal"¹³⁵ off "Bassadore, though it stretches out a great way to sea, is a bank of sand, and not dangerous." This accords perfectly with the accident which befell the fleet, as well as the escape from it, and confirms the assertion made all along, that the Greek term rendered rocky ground, is every where mistaken; for wherever there is shallow water, a rippling, or a surf, there only, in this journal, it is applicable.

The island Pylora¹³⁶, seen in this day's course to the left, fortunately retains still its ancient name, and is written Peloro, Polior,

¹³⁵ Niebuhr, in Dalrymple's Collection, p. 52.

¹³⁶ It is visible at seven leagues distance. M'Cluer, p. 19.

Belior,

Belior, in the several charts; it is described as six miles long, and three in breadth, with a reef of rocks on the north-west side, lying in latitude $26^{\circ} 22' 7''$. The fleet did not anchor at it, as it was said to be desert, but passed on to Sidodone, where no supply was found but fish and water; the country being poor, and the people living like Ichthyophagi. Strabo, who finds a Tyrus and Aradus in the gulph, is said by Gronovius and Ortelius to turn Sidodone also into a city of the Sidonians, for such was the fashion of Greeks to reduce every sound¹³⁷ to a relation with something within their own knowledge. The position of Sidodone is not difficult to determine, if our charts are correct, for many of them place a town at the point called Sertes by M'Cluer, and the distance from hence to the western point of the bay answers to Arrian's measure of nineteen miles to Tarfia¹³⁸. I have already noticed the disagreement of d'Anville and M'Cluer, in the transposition of the two capes, which is well worthy of consideration; for though Sidodone is an obscure place, and the difficulties minute, the fixing of a position is material, as an error at the beginning might vitiate the whole series. To prevent deception, therefore, I must first state, that M'Cluer¹³⁹ mentions Suráfs, or Saráfs, as a place he anchored at to the eastward of his Certes; this answers nearly to the Sannás of d'Anville, which he makes the termination of a range of mountains; and here there is a town, for such M'Cluer marks; and here he procured stock for his voyage. The next point westward he calls Certes, and adds that it is visible from the Tombs, on leaving which you are to steer

¹³⁷ Thus Nyfa and Meros, or Merou, were names they found in India, and immediately made out a connexion with Bacchus.

¹³⁸ Jarsey, for Certes or Ghirde, appears in one of Thornton's charts.

¹³⁹ P. 18.

west for the isle of Polior. If, therefore, we observe that Nearchus was at Tumbo, we have here his course pointed out to the cape, and his island Pylora on the left, as distinctly as if M'Cluer had been on board the fleet. M'Cluer next points out a second cape twenty miles to the westward of Certes, which he styles Bestion (the Tarsia of Nearchus); and between these two capes, he says, there is a town called Charrack. Now M'Cluer may have misnamed Certes, Bestion, and Charrack; but the geography is precise, and this town, whatever name it bears, is placed at his Cape Certes by all the other charts, and by d'Anville himself. Whatever error, therefore, we may find in names, there is none in fact; for a very small distance allowed, in placing the town a little to the westward of this Certes, will give the nineteen miles of Arrian from Sidodone to Tarsia; and in this part the journal is peculiarly correct. In regard to names, I do suspect M'Cluer of mistake, but I am not qualified to decide. Charrack¹⁴⁰, for instance, I doubt, because Charrack Hill, the most conspicuous feature on the coast, is seen to the westward of his Bestion; and therefore I do not discover a reason for placing a town of that name between the capes, or rather at his Certes, which is above forty geographical miles from Charrack. This town, however, is called Bustion by d'Anville; and the Certes of M'Cluer, Cape Bustion: and now, though I am certain I have my geography right, I find it impossible to harmonise the names to any one system¹⁴¹. I shall therefore give the authorities on both sides, and leave the decision to future navigators on the spot.

¹⁴⁰ Charrack (pronounced according to the
 ЧН in chariot) is the Tsjarrac of Niebuhr,
 and the site fixed west of Tarsia.

¹⁴¹ See this difference at large in Dalrym-
 ple's Collection, tab. v.

TWO CHARTS.

Eastern Point.

Certes, or Sertes,	M'Cluer.
Sertifs, -	Harvey.
Sertes, -	Cant.
Sertes, -	Mascall, 1773.
Serte -	Van Keulen.

Western Point.

Bestion, -	M'Cluer.
Girde ¹⁴² ? -	Harvey.
Bustion, -	Cant.
Bustian, -	Mascall, 1773.
Batanas, -	Van Keulen.

Eastern Point.

Bustion, -	D'Anville.
Biftana, -	Bellin.
Bastion, -	Holmes.
Biftana, -	D'Apres, 1745.
Biftana, -	D'Apres, 1776.
Râs-el-Heti ¹⁴³ ? -	Niebuhr.

Western Point.

Gherd, -	D'Anville.
Gueldre, -	Bellin.
Sertis? -	Holmes.
Gueldre, -	D'Apres, 1745.
Gueldre, -	D'Apres, 1776.
Râs-el-Dsjerd, -	Niebuhr.

In determining this question, therefore, the French authorities agree on one side, and the English and Dutch on the other; and here a question arises, whether all the French geographers do not follow Thevenot, as d'Anville confessedly does. Thevenot's words are these: "We were got off of the other end of Keis, and then
 "the wind slackened much. Half an hour after we came off, and
 "on a place of the main land, where the shore opens towards the
 "east, and forms a gulph in shape of a half circle, and the *outmost*
 "point of that circle is called Gherd." I have not the French

¹⁴² Harvey has made two points of Girde coast ill defined; but there can be little doubt that his Dsjerd gives by the s, Sertes and Sertifs, which are evidently the same.

¹⁴³ Niebuhr is not perspicuous. Râs el Certes, and by the d, Derd and Tarfia. Heti is too close to Râs-el-Dsjerd, and his

edition; but d'Anville, who quotes it, writes, *La terre où finit ce demicircle est appelée Gherd*. Now, though this is not definite, for a semicircle has two terminations, still d'Anville determines on Gherd for the western cape, in which he is supported by Niebuhr, whose testimony is of great weight, and his Dsjerd is evidently the western cape and Tarfia¹⁴⁴. Upon the whole, therefore, I incline to think M'Cluer's topography right, and his names wrong; and as his mistake in affixing the name of Bombareek to the wrong cape has been noticed before, there is less scruple in supposing him liable to a similar error in regard to the whole of this bay.

TARSIA
CAPE.
January 5.
Ninety-sixth
day.

KATAIA
ISLAND.

At Sidodone water was procured for the fleet, which, after weighing in the morning, proceeded somewhat less than nineteen miles to a cape named Tarfia¹⁴⁵, and the same distance from that point to Kataia, an island at the western limit of Karmania. These distances agree so nearly with our nautical authorities, and the intervention of the cape marks so precisely the nature of the coast, that it is impossible there should be any error of consequence in fixing the position of Sidodone. Kataia still retains some resemblance to its ancient name in the various forms of Kaish, Keish, Guefs, Queche¹⁴⁶, Qâs¹⁴⁷, Ken, or the Zeits of the Dutch maps. It is an island evidently more marked by navigators than others in its neighbourhood; and yet, as it lies twelve¹⁴⁸ miles from the coast, there is no apparent

¹⁴⁴ The classical reader will be more easily convinced of this fluctuation by reference to the writing of Tyros. The Phœnician word is Tfor, with the two initials τ s, correspondent to Niebuhr's π s; and Tfor becomes by the τ , τ - ρ - ϵ s, Tyros; by the s, Sor or Sar, the root of Sour Souria; $\Sigma\upsilon\rho\acute{\iota}\alpha$, Syria; and found in Virgil,—Sarrano indormiat ostro; where the scholia write, a *Saro* murice. By the

same analogy. Tferd-Tarfia, Serd-Sertes, Certes, Gherd, Sjerd.

¹⁴⁵ I conceive that Tarfia is preserved in the Râ-el-Dsjerd of Niebuhr.

¹⁴⁶ With the French pronunciation.

¹⁴⁷ Niebuhr.

¹⁴⁸ Eight by M'Cluer's chart; nine by Thevenot.

reason

reason for its attraction of Nearchus, unless it were the hope of procuring there a supply of goats for the fleet.

Kataia, says Arrian, is a low ¹⁴⁹ desert island; and Thevenot ¹⁵⁰ mentions it as about five leagues in circuit, very low and flat. M'Cluer adds, it is a very beautiful island, better planted with trees than any in the gulph, and about the size of Polior, but not so high. This is farther confirmed also by Lieutenant Cant, who calls it a low fruitful island ¹⁵¹. Nearchus found it uninhabited; but frequented by visitors from the continent, who annually brought goats here, and, consecrating them to Venus and Mercury, left them to run wild. What deities of the Persian or Arabian mythology are alluded to by these titles is not easy to determine, but the practice indicates the navigation of the gulph in that age; and if the gods were to protect the breed for a time, we must suppose it was ultimately intended for the use of man, upon the same principle that Juan Fernandez was stocked by the Spaniards in the South Seas. Nearchus has not informed us whether he violated the asylum of these animals, but this appears the natural inducement for his leaving the coast to make this island, as he had obtained no supply either at Tumbo or Sidodone; and we do not read that the sacrilege, if committed, was revenged by Mercury or Venus in so severe a manner, as the companions of Ulysses were punished for feasting on the oxen of Apollo.

Keish was at one period possessed of a flourishing commerce, and great influence in the gulph; for d'Anville informs us from Texeira, that even Gerun itself was part of its territory, and granted to the

¹⁴⁹ αλιτεία.

¹⁵⁰ Part ii. p. 173.

¹⁵¹ Al-Edrisi, p. 56. mentions Kis also.

D'Anville. But without any attributes except its distance from Kismis.

Hormosians of the continent when they were oppressed by the invaders¹⁵² on the main, and transported to Gerun their treasures and their name, as to a place of refuge. The information of Niebuhr respecting this practice of the natives on both sides the gulph, flying from oppression to the islands, throws great light upon this subject; such emigrations seem to have existed in all ages, and some appear to have taken root and flourished, like those in Keish, Ormuz, and Karack, till they were involved in the revolutions of the continent; while others served only for a temporary retreat, abandoned again as soon as the storm had blown over. Keish retains still some superiority in the account of our English navigators who have visited it, by whom it is described as flourishing, well planted, and capable of supplying refreshments to the vessels which frequent this sea. Its latitude is fixed by Mr. Dalrymple at $26^{\circ} 34' 52''$.

A line drawn from Kataia to the main, separates the provinces of Karmania and Persis; and that this line is not merely imaginary, may be concluded from a remarkable hill on the main, called Charrack in our English charts, which is probably the termination of a range running inland, and forming a natural boundary. Somewhere at the foot of Charrack, and nearly opposite to Keish, stood the town of Siraff, noticed by Al-Edrisi as a seat of commerce in his time, and connected with Keish, as Gomeroon was afterwards with Ormuz. In the ninth century Siraff¹⁵³ was a port of importance; for it seems in that early

¹⁵² Most probably upon the inroad of Timour's sons, about the year fourteen hundred.

¹⁵³ See the voyage of two Arabians from Renandot, in Harris's Collection, vol. i. p. 523. The ships of Siraff went to Maskat to

take their departure, *i. e.* they found that coast the best point for taking the advantage of the monsoons. Alfragani mentions its decay in his time, *Gol.* p. 116; but perhaps Golius himself, and not Alfragani.

age to have been in the possession of the Arabians, and the centre of an Oriental commerce which extended to China; both Kataia and Siraff fell into decay, as Ormuz rose into consequence long before the Portuguese were masters of that island; and though Siraff is now in ruins according to d'Anville, Charrack (the Tsjarâk of Niebuhr) exists very nearly in the same site¹⁵⁴, and is still the residence of an Arab Sheik. The measures upon this coast proving as erroneous from deficiency, as those on the coast of the Ichthyophagi from excess, it becomes necessary to specify the default, for which no better excuse can be given than the situation of Nearchus in both instances. If distress magnified the length of his former measures, ease and security appear to have diminished these on the coast of Karmania. The detail stands thus:

<i>British Miles deduced from Arrian's Stadia.</i>	<i>From BADIS</i>	<i>Stadia.</i>	<i>N. Miles by Chart.</i>
50	to an open shore, Armozon,	800	43
$43\frac{3}{4}$ } 50	{ Neoptana, -	700 }	69
$6\frac{1}{4}$ }	{ Anamis, -	100 }	
$12\frac{1}{2}$	Oaracta, -	300	34
$18\frac{3}{4}$	Oaracta, second station,	200	32
25	Tumbo, -	400	36
$37\frac{1}{2}$	Sidodone, 600 (allowed)		36
$37\frac{1}{2}$	Tarfia and Kataia,	600	46
231 $\frac{1}{4}$		3100	296
	Allowed at Sidodone,	600	
		3700	

¹⁵⁴ There is just ground of suspicion that Charrack, Tsjarâk, Sharak, Sarak, is actually Saraf, or Siraf. See the account of this town and its commerce in Renaudot and Harris; and the circumstance of houses built with the bones of whales. Renaud. p. 95. Eng. edit.

These three thousand seven hundred stadia agree with the total both of Strabo and Arrian; and the distance allowed at Sidodone not only makes the sum accord, but corresponds with the measures of the former days. Unfortunately, however, three thousand seven hundred stadia produce only two hundred and thirty-one miles British, and the opening of the compasses gives two hundred and ninety-six nautic miles, or about three hundred and thirty-nine British; we have, therefore, a balance against Arrian of one hundred and eight miles which he has not accounted for, and no compensation is at hand to which we can have recourse, for the distance omitted at Badis cannot amount to ten miles¹⁵⁵. The great error lies between Badis and the Anamis, or round the coast of Oaracta, for some of the latter measures are sufficiently correct; and as Arrian has allowed only fifty miles for the length of that island, which is in reality little short of seventy, this, with the other mistakes dependent on it, though it will not compensate, may contribute to reconcile the difference. It is not, however, my intention to justify the stadium of d'Anville in particular instances; but having shewn its general correspondence with the course of the whole voyage, I state facts upon the present occasion as they appear. Some advantages¹⁵⁶ might have been taken in measuring with the compasses, of which, though I availed myself in detailing particular stations, I have avoided in collecting the total. One circumstance may be mentioned in Arrian's favour, which is, that all his numbers are hundreds without regard to inferior denominations, and this proves

¹⁵⁵ It is, I imagine, from Cape Jask only island to island, I have sometimes taken from the nearest side of each. This makes some

¹⁵⁶ In measuring the total, I necessarily distances correct in detail, but discordant in the took from point to point. In measuring from total.

that he speaks generally, thinking little of modern accuracy, which divides to a minute or a second.

The coast of Karmania or Kerman, next the sea, is generally a low and narrow stripe below the mountains⁵⁷, arid, and hot in the extreme; this tract is called Kermesir, and compared by Niebuhr to the Tehama of Arabia, a specific term among that people also, to distinguish the margin bordering on the sea, from the mountainous region inland. Kermesir, however, is not confined to Kerman, but prevails as applied to a territory of the same character, tending much farther to the westward, through the maritime part of Persis. This whole coast, from Gomeroon to Cape Bardistan, is now, he informs us, under the power of a tribe of Arabs called Beni Houle, divided into little principalities under Sheiks, independent of each other, and all weak by perpetual dissension. There is little agriculture among them, as they depend for support on fishing and hunting, and export little except wood, or such commodities as the country yields without cultivation. The Sheiks⁵⁸ he specifies are those of Seer⁵⁹, Mogo, Tsjærack, Nachelo, Nabend, Afloe, Tæhrîe, Schilu, and Konkoun, which are all places on the coast, with a territory not worth defining; and the inhabitants of which live, like our ancient Ichthyophagi, principally upon fish, either fresh or preserved. Just such a town Arrian represents Sidodone⁶⁰ to have been in the age of Alexander; and though the decline of the Persian power had not been of sufficient continuance to allow of

⁵⁷ Sannas and C. Nabon are the termination of ranges at the sea, coming from the chain which runs parallel with the coast.

⁵⁸ Schiech. Niebuhr.

⁵⁹ See also Otter, who relates the trans-

actions of this tribe with Nadir Shah. Vol. ii. c. 25.

⁶⁰ Πολικινίω σμικρῇ, καὶ πάντων ἀπόρων, ὅτι μὴ ὕδατος καὶ ἰχθύων, P. 353.

Arabian intruders, as is the case in the present desolation of that empire, the manners of the people are very similar to those of the modern inhabitants, and their connexion with Arabs, I am persuaded, might be traced, by analysing ¹⁶¹ the names preserved in our classical historians. That part of the province called Moghostan, towards the mouth of the gulph, with the island of Kismis, and those in its neighbourhood, derived infinite advantage from the settlement of the Portuguese at Ormuz, and foresaw the ruin of their own happiness in the preparations of Abbas for the siege; they were consequently disaffected, and incurred the suspicion of their sovereign as strongly as the Portuguese provoked his hatred. The consequences have proved the justice of their reasoning; agriculture is lost when commerce produces no demand, and manufactures perish where there is no protection. Before the capture of Ormuz, the English loaded silk, both raw and manufactured; they find nothing there at present but salt ¹⁶², sulphur, Kerman wool, and copper; native commodities, but not wrought. The nature of this country from Gomeroon to Lar, the capital of Laristan, which is the district next to Moghostan, cannot be described better than it is by Pietro della Vallé ¹⁶³; he insists much on the total want of rain, a circumstance similar to that on the coast of Mekran ¹⁶⁴, and mentions, that at Lar itself, where there is neither stream nor spring, it sometimes does not rain for several years following. I suspect that Laristan terminates west upon the coast, near Kataia, as did the ancient limit

¹⁶¹ Bruce has great success in applying this analysis to some of Ptolemy's names in the Red Sea, Orneon, Portus Albus, &c. vol. i.

¹⁶² Journal of Houghton Indiaman, 1755.

¹⁶³ Vol. v. sub fine.

¹⁶⁴ The correspondence of the modern accounts with the ancient is worthy of remark. Strabo says, it never rains in Mekran below the mountains. Lieutenant Porter writes, that when he was at Churbar there had been no rain for six years.

of Karmania; or, perhaps, at Sanás: but I find no authority to determine this point with precision. Both these districts are visibly comprehended in Kerman, and are, as I conjecture, confined to the tract below the mountains.

Both Ptolemy and Marcian fix the limits of Karmania at the river Bagrada; but as they disagree with Arrian in carrying the eastern boundary to Mosarna, and this river on the western border is not very clearly determined by modern geography, it will, if not essential, be some gratification to curiosity at least, to examine Ptolemy's list of rivers, and try if any light can be derived from the order he has given them. There is no river on the main opposite to Keish, or Kataia, in any of our charts, and this proves that the limit assigned by Arrian and Ptolemy is not the same; in looking, therefore, to the west, we find a conspicuous point at Cape Nabon¹⁶⁵, and a river which falls into the gulph close to it; here I fix the Bagrada of Ptolemy; and, by reckoning from Anamis to this stream, I can discover five rivers out of his seven, if not more.

<i>Marcian.</i>	<i>Ptolemy.</i>	<i>Arrian.</i>	<i>Modern.</i>
1. Saganus,	Andanis,	Anamis,	Mina.
2. Addanius ¹⁶⁶ ,	Saganus,	}	{ Bender-Ser?
3. Akhiadama, Agedana Island,	Akhidana,		{ Nagana Guda?
4. Korius,	Karius,		Rud Shiur.
5. Kathrapus,	Atapus, Araps,		Sarafs?
6. Dora,	Dara,		Dara-bin.
7. Bagrada,	Bagrada,		Nabon.

1. The Saganus of Marcian is evidently transposed, which justifies the liberty I have before taken with this author; in rectifying his

¹⁶⁵ The Nabon river is a very large stream, and consequently fitter for a boundary. Mr. Jones.

¹⁶⁶ Tuanés, MS.

transpositions,

transpositions, and reducing them to the order of Arrian; for in this instance, though he is the professed copyist of Ptolemy, he deserts his original; I assume, therefore, his Addanius for the Andanis of Ptolemy, the Anamis of Arrian, and the Mina river, or Ibrahemi, of our modern charts.

2, 3. Saganus ¹⁶⁷ succeeds therefore according to Ptolemy, and either at this river, or Achindana the next in order, I place the stream which comes in very near Gomeroon at Bender-Ser. I cannot find two ¹⁶⁸ rivers, or even torrents, at this place in any chart; but in Reffende's ¹⁶⁹ manuscript delineation of the coast I see two streams, one opposite to Ormuz and a second more to the south; these may be the two of Ptolemy, but more likely the Bender-Ser and Ibrahemi which Reffende mentions, in another part of his work, by the name of Obremi. D'Anville has a river in this position which he names Nagana-Guda, bearing some distant resemblance to Saganus, and Akhiadama, or Akhidana; or both perhaps, have a relation to Marcian's Agedana, which he calls an island. It is not impossible, since Marcian mentions nothing correspondent to Ormuz, that his A-Gedana is the O-Gerana of Arrian, the Gerun so often corrupted; and if so, his own Akhiadana and Ptolemy's Akhidana are the correspondent river on the main, opposite to Ormuz, where the stream of d'Anville lies. Upon this supposition, we account for one stream at least out of the two.

4. In Karius ¹⁷⁰, or Korius, we may trace some resemblance to the Rud-chiur ¹⁷¹ of our modern maps; a stream of some importance,

¹⁶⁷ Saganos. Pliny, lib. vi. 25.

¹⁶⁸ Pietro della Vallé passed one small stream in his road from Mina to Rudchiur. Vol. v. p. 419.

¹⁶⁹ Brit. Mus.

¹⁷⁰ Corius P. Mela.

¹⁷¹ See Pietro della Vallé, vol. v. p. 373.

as it has a longer course than the others, forms the boundary between Moghoftan and Lariftan, and falls into the Kishmis Channel, not far from Kunk or Kongo, a town, from its healthiness, much fitter to have become a mart than Gomeroon, if it had not been situated in the Straits. Chiour, Kiour, or Schiur¹⁷², signifies salt, and Rud-Chiur the Salt River; if, therefore, we observe that the Greeks had no sound like Sch¹⁷³, it will be readily allowed that they could not approach nearer the Oriental name than Koor-ius, or Kor-ius, and this consideration; united with the order and locality of this river, ought to establish its identity. If farther confirmation is wanted, we find in Pliny¹⁷⁴, that he mentions it by the very name of Salfos¹⁷⁵.

5. Kathraps, Kathrapus, or Kathrapis, corresponds with the Araps, or Arapis, of Ptolemy; but as no stream of modern geography connects with it, it serves only to justify the liberty we may take with names; or, if it has a modern representative, it is possibly a torrent from Mount Sannafs, or Sarafs; and Saraps is not a greater variation from Araps than the Kathraps of Marcian.

6. Dora¹⁷⁶, or Dara, presents a similarity of sound with the Dara-bin, or Derrabin, of our present charts, laid down almost op-

¹⁷² Schiour, Chiour, and Kiour, enters into the composition of many names of rivers; for many are salt in Persia, Karmania, and the Mekran.

Otter has a Roud-guird in his route from Hamadan to Isfahan. Vol. i. p. 192. And Guird, he says, signifies *environs*. It is possibly Guird for Kiour; but, if otherwise, Guird, environs, is from Gerd, Gherd, or Certa; and signifies a town, not a river. The place, however, where he was, was called Guerdge, *the town*; and, if so, Roud Guird is only the river of the town.

¹⁷³ Pietro della Vallé, when he writes Chiur, naturally suggests the Italian pronunciation, answering to Kiur in English.

¹⁷⁴ Lib. vi. cap. 25. He perverts the order. See Salmas. Plin. Ex. 1181.

¹⁷⁵ D'Anville carries this title of Salfos up to Sitacus; but if we observe that it is joined with others evidently in Karmania and at the eastern part of the gulph, why should it be transported into Persia, and so far to the westward? See Mem. p. 159.

¹⁷⁶ Daras of Pliny, *ibid*.

posite to the islands Busheab ¹⁷⁷ and Schitwar. Here I must confess I looked for the site of Ptolemy's Bagrađa, as lying nearest to the Kataia of Arrian; but the resemblance of sound induces me to fix Dara at Dara-bin, and if so, Bagrađa must be carried to the next stream westward, which is at Cape Nabon. The Darabin is in the neighbourhood of Arrian's Mount Okhus, and afforded a safe anchorage to the fleet, apparently in the mouth of the river. That mountain extends along the coast from this river to Cape Nabon, and is called Dahhr-Afbân by Niebuhr ¹⁷⁸; Dahhr is as evidently, therefore, the Dara of Ptolemy as Dahhr-Afbân is the Darabin of the moderns.

7. Bagrađa ¹⁷⁹ I place at Cape Nabon, or Nabend, for the reasons already specified; and if I find no modern name to correspond with it, it must be considered that navigators do not give us the native names of rivers in the gulph, but denominate them from the places where they disembogue. The Basra river is known to every ordinary mariner; the Schat-el-Arab is a name that we must search for only in the map of the geographer, or the chart of the enlightened navigator. It is not improbable, therefore, that if the question were put to the natives, their name of the Nabon river might still retain the traces of Bagrađa.

This disquisition on the rivers of Karmania ought not to be considered as foreign to this work, for one great object of it, is, to recon-

¹⁷⁷ See M'Cluer's chart, Harvey's, d'Apres, &c.

¹⁷⁸ And Capper, who follows Niebuhr's orthography.

¹⁷⁹ D'Anville carries the Bagrađa to the Agradat of Strabo in Cœle-Persis; but *κοίλη* implies the country between the mountains,

and not on the sea coast. By the name of Dara, which precedes, and which I consider as demonstrably fixed, from its relation to Dahhr-Afbân, I am fully persuaded that Nabon is the Bagrađa. See d'Anville's Mem. p. 159.

cile ancient geography with modern; and if a monument is by these means raised to the correctness of Ptolemy on the coast, it is some compensation for the charge of error imputed to him in regard to the islands, a just distribution of these was, till within the last century, a desideratum in geography; and if they are now disposed with precision, the world is indebted to the attention of English navigators, and to no one more than M^cCluer¹⁸⁰.

I shall close this account of Karmania with noticing, that Arrian informs us the Karmanians had the same manners, habits, and customs as their neighbours in Persis, and resembled them likewise both in arming and forming the troops they contributed to the service of the empire. The modern Persians consider them as a people, acute, subtle, and prone to rebellion; and their province was the last retreat within the empire for the ancient Parsees, or worshippers of fire. This unhappy cast, under the name of Guebres, Abbas endeavoured to exterminate, when the residue was dispersed over India, and a numerous tribe of them are now settled at Bombay, where they build those celebrated ships which, in construction and durability, prove the service they might have rendered their own country. Never, since the world began, did any government gain by persecution.

II. P E R S I S.

IN conducting the fleet from its entrance into the gulph, it has been no difficult task to ascertain every station at which it anchored; the assistance I have derived from d'Anville, and the correctness of our English charts, I have acknowledged at every step, and it is a

¹⁸⁰ See *infra*, Inderabia.

pleasure to add, that the more correct they are, the more clear is the correspondence of the journal with the actual state of the coast at the present day. We are now to enter upon the province of Persis, and though I cannot promise equal perspicuity in regard to some stations of little importance, the general description of the coast is perfect, and the principal harbours as fully ascertained as they are in modern geography. One instance of this will be more particularly apparent in the station which immediately succeeds.

—
 ILLA PORT.
 KAIKAN-
 DROS
 ISLAND.
 January 6.
 Ninety-
 seventh day.
 —

The fleet weighing from Kataia arrived, after a course of twenty-five miles, at Illa, an anchorage on the coast covered by the island Kaikandros. The name which M'Cluer gives to a place very nearly correspondent is Gillam¹⁸¹, from which if we subtract the initial letter, which is the representative of an aspirate, we find Illam sufficiently allied to Illa; and if the antiquity of Gillam could be ascertained, the identity would be complete. In Kaik-ANDROS also the modern name of Andarvia may be discovered, which is one out of a multiplicity of titles bestowed upon an island in this situation, styled Inderabia by M'Cluer, Inderabi¹⁸² by Niebuhr, Angarvia, Indernea, and Indernore, by the other charts: and perhaps when we reflect that the Greeks have no SH, we may be induced to suspect that the Kaik-Andros of Nearchus is equivalent to¹⁸³ Keish-

¹⁸¹ It is the same as Lieutenant Cant's Gella, which approaches nearer to Illa, or Illa; but Cant's Gella is ill placed. Illa becomes Hilla and Gilla, like Han, Khan, Cawn. Hendoo Gentoo.

¹⁸² Anderipe, Inderuca, Hinderabi, &c. It is possibly also the Lameth of Al-Edrisi, as he mentions Siraf and Tfafac, *i. e.* Tsjarack,

in its neighbourhood, p. 120.

¹⁸³ Kili Kiavus is likewise mentioned by Otter, vol. ii. p. 213. but fabulous.

After making this conjecture, I found in Golius, that Caicavus is *divus Cavus*, who obtained water and milk in this island or Keishi. Gol. ad Alfrag. 117.

Andarvia;

Andarvia¹⁸⁴; an additional title this island might have obtained from its proximity to Keish, or its dependence on it. From the eastern point of Keish to Andarvia, says d'Anville, it is nearly six leagues; and he assumes¹⁸⁵ the eastern point as a spot where the fleet might have anchored, in order to acquire a distance approaching to the twenty-five miles of Arrian: but d'Anville would have been better pleased to find that M'Cluer, in his second chart, has extended the distance from twelve to twenty geographical miles between Keish and Inderabia, and twenty geographical miles supplying upwards of twenty-three¹⁸⁶ miles British, make an agreement with Arrian sufficiently correct. M'Cluer writes to Mr. Dalrymple¹⁸⁷: "I have altered the situation of Inderabia, as I found it too near Kenn¹⁸⁸." And in this testimony we have a satisfaction in observing, that the more correct the modern chart is, the better it corresponds with Arrian. M'Cluer has rendered a second service in laying down this isle nearer to the main than it appears in most of the other charts, for so Arrian describes it, as covering the road and making the anchorage secure. Inderabia, according to Lieutenant Cant¹⁸⁹, is a low island, not inhabited, but affording fresh water; "the channel between it and the main is about a mile broad, with water from

¹⁸⁴ I have been the more confirmed in this opinion by observing in Golius, p. 117. which I have been enabled to interpret by the assistance of my friend Dr. Russell, that Keis is the proper name of a man; and that the Arabs, fabulously perhaps, like the Greeks, derive the name of the island Keis from Keis ebn Ameerrat, Keis the son of Ameerrat. In this manner, Keis might be easily made an accessory to Andarvia also. Andarvia, written so many ways, approaches the Greek more nearly in Portuguese, Anderoya; for so it appears in Resende.

¹⁸⁵ This licence is justifiable wherever a coincidence can be obtained by it; and I use it freely when occasion requires, because the point of anchorage is never ascertained by the journal in the several islands.

¹⁸⁶ This distance is taken from the two extreme points nearest; so that by taking an anchorage in Kenn, you may have twenty-five miles exact.

¹⁸⁷ P. 13. Pref. to Dalrymple's Collection.

¹⁸⁸ Keish, written Kenn in several charts, but I believe always improperly.

¹⁸⁹ P. 44.

“seven to fifteen fathoms, nearest the island:” its mean latitude is $26^{\circ} 49' 37''$.

OKHUS
MOUN-
TAIN.
An ISLAND.
A PORT.
January 7.
Ninety-
eighth day.

From Kaikandros to a second island, no distance is given, and only two miles and a half to an anchorage on the coast; from this anchorage again, to a harbour under a mountain called Okhus, no measure is specified. The island, Mr. d'Anville complains, was laid down incorrectly; but he read in the old Portuguese charts, Ilha de L'Ara, or Lara, and so I find it in Reffende and Thevenot¹⁹⁰. We have now, however, two islands accurately placed in M'Cluer's second chart, which agrees better with Arrian than his first, and by the position of these we must determine the course. Taking, therefore, a measure proportionate to the correctness of the journal for some days past, I allow, from the centre of Inderabia to Mount Okhus, about three hundred or three hundred and fifty stadia, that is, from eighteen to twenty-one miles, and I include the whole course in one day. The two islands are called Schitwar¹⁹¹ and Busheab, and the latter is written Schech-Schaiib by Niebuhr, equivalent to Abu-Schaiib or Bu-Sheab; for Schech is *old*, and Abu, *father*, and both are titles of respect, as we use Seigneur, or Sir, in Europe. Schitwar, the smallest of the two, and the one directly in the course of the fleet, is the island which Arrian means, and which he says was inhabited, and possessed of a fishery for pearl; a circumstance not unworthy of remark, as several travellers inform us, that pearls were formerly taken at Karak¹⁹² and other places on the eastern side of the gulph, as well as on the celebrated bank of Bahr-ein. If I

¹⁹⁰ Thevenot saw the two islands at a distance, and therefore brought them into one; and so M'Cluer says the trees on Schitwar seem to be on Busheab. It is seventy leagues from Karak, according to Thevenot, Part ii. p. 173. Thevenot mentions likewise that it is very near the coast, and a passage within. It is possibly the Araka of Ptolemy, ¹⁹¹ Capper writes this name Shudwan. ¹⁹² Thevenot, *ibid*.

am right, therefore, in assuming Schitwar for Arrian's nameless island, the remainder of this day's course is clear; for the forty stadia he allots for crossing from hence to the main, is nearly equal to the breadth of the channel between Schitwar and the eastern point of the river Darabin, where I suppose the first anchorage to be; and the second, only by crossing the river to the western point, or some convenient bay adjoining. This is the apparent reason why no distance is mentioned here, while the measure between Inderabia and Schitwar is an omission. M'Cluer marks an anchorage in a bay, and a town called Schitwar¹⁹³, just to the westward of the mouth; here¹⁹⁴ I conclude the station of the fleet was, and here we can find a mountain to correspond with Okhus. That the town on the main should bear the same title as the island is a circumstance similar to that which takes place at Ormuz, and is founded probably on the practice recorded by Niebuhr, already noticed, of the inhabitants on the coast flying to the islands, in their neighbourhood, or the island receiving its name from a town on the main. This is the second instance, and two more will occur, with a third, that possibly may be accounted for upon the same principle.

The mountain Okhus¹⁹⁵ is nothing more than the termination of an high range of coast extending from Cape Nabon to the river Darabin, called Dahhr-Afbân by Niebuhr, as already noticed, and distinctly specified in M'Cluer's first chart; I have not been able to trace the connexion of this range inland with the great chain, which runs parallel to the coast; but there can be little doubt of the fact,

¹⁹³ Chetwar.

Harvey 1778.

¹⁹⁴ Harvey's chart places Schitwar point on the eastward of the river, but marks a small town where M'Cluer's Schitwar or Chetwar is.

¹⁹⁵ See M'Cluer's first chart. Two of Claude Ruffel. Kämpfer. Van Keulen. D'Apres 1776. Harvey 1778.

as the two rivers Darabin and Nabon at the two extremities ought to be the produce of this mountain, throwing off its waters on both sides, and forming two streams, which appear to have some pre-eminence above the torrents to the westward. In Dahhr-Afbân¹⁹⁶ we have the Dar-abin of our charts, and the Dara of Ptolemy, which he places indeed in latitude $28^{\circ} 40'$; but as he has given a more northerly direction to the gulph than it really has, this is readily accounted for.

At the mouth of this river, and on the westward side then I fix the station under Mount Okhus¹⁹⁷; and I must observe that M'Cluer's second, or corrected chart, coincides with the several circumstances in Arrian more nearly than any of the others, or even than that which is inserted in the present work.

Of the two islands, Schitwar lies nearer to the coast on the south-east of Busheab, and the channel between Schitwar and the main was not passed either by Cant or M'Cluer; but they both intimate, from the information of their pilots, that the passage is clear, as well as the other between this isle and Busheab, which is less than a mile broad. Busheab is the largest island in the gulph except Kishmis¹⁹⁸; it is low as well as Schitwar, but has some high land at the back; it is well planted and inhabited, four leagues long, and four or five miles broad, and lies in latitude $27^{\circ} 1' 30''$. Schitwar is said to be still more fruitful, which is a sufficient reason why it was found inhabited by Nearchus, and possibly why a pearl-fishery was established in its neighbourhood. The narrowness of the channel reduced to less

¹⁹⁶ See Niebuhr, vol. ii. p. 192. French edition.

¹⁹⁷ Ochus is the name of a river which falls into the Oxus, and I doubt not contains some

relation to a river here. See Salmas. Plin. Ex. p. 216.

¹⁹⁸ And I suppose Bahrein.

than

than three miles by Arrian, makes me adhere to M'Cluer rather than any other authority; and as he lessens¹⁹⁹ the usual distance specified between Busheab and the main, there is great reason to believe that he is near the truth in laying down Schitwar, though he was not through the channel himself.

Niebuhr places Nachelo, the residence of a Sheik, in the river Darabin; and if I had found any resemblance in this name²⁰⁰ to Okhus, I should have looked to this place for a station; but in the position taken there can be no error of consequence to the journal, except that an addition to the distance Arrian gives between the Darabin and Cape Nabon would be convenient, as his account is at present somewhat in excess.

From Okhus to Apostani the course was twenty-eight miles, which carries the anchorage rather more than half way from the Darabin to Nabon; and here we are to find a road, as several vessels were seen at anchor, and there was said to be a village at the distance of near four miles up the country. A more hopeless cause for research has not yet occurred, for the high land upon the coast promises little for the site of a village, and the nature of the shore presents no appearance of shelter. D'Anville finds a bay called Estornadi at the foot of the mountain, from what authority does not appear, and from want of good charts has no river either at Darabin or Nabon. He places Affelo²⁰¹ and Apostanos²⁰² in the same place, which is evidently incorrect, as Affelo²⁰³ or Aflo, is fixed by all the best charts to the north-westward of Nabon, while Apostani is evidently

APOSTANI,
or
APOSTANA.
January 8.
Ninety-ninth
day.
A day
allowed.

¹⁹⁹ Memoir, p. 20.

²⁰⁰ Okhus, N'-Okhe-lo?

²⁰¹ Has he not confounded Affelo with the Affetow of our charts?

²⁰² So d'Anville writes, and Anamin, Ilan, &c. from the Latin authorities, he follows.

²⁰³ See Niebuhr. M'Cluer writes Afola, like the island on the coast of Guadel.

twenty-five miles to the east. But before we can determine upon a site, we must dispose of a town called Chewra, Chetow, or Sherouw, which takes a variety of positions from the eastward of the Darabin, almost to Cape Nabon.

The resemblance of these names, however written, would induce a supposition that they all relate to the same place; but Sherouw, or Sherouve, in the Dutch charts placed eastward of the Darabin, is the Shirav, or Siraf, of the Eastern geographers, opposite to Keish, and formerly a place of great commerce; and Chetow is the place written Chetwar by M'Cluer evidently related to the island Schitwar, and placed by him with an anchorage just to the westward of the Darabin. The same site is given to Affetow, in Lieutenant Harvey's ²⁰⁴ chart 1778, and Af-Setow is Setowar and Chetwar in another form. This same chart, which marks a village here, marks a second without a name half way between the Darabin and Cape Nabon; and this second is the place called Shevoo by Captain Simmons ²⁰⁵. "About half way from hence [the Darabin] to Cape Nabon is Shevoo ²⁰⁶, where good water may be got." These are his own words, and here, unless Shevoo ²⁰⁷ is misapplied, we get a situation from Harvey, and a name from Simmons. The position of this village, be its name what it may, answers to the Apostani of Arrian, and the facility of obtaining good water here, is a sufficient reason for finding it frequented by the country vessels in the age of Nearchus, or at the present hour. The general distance given from

²⁰⁴ In a chart comparing Harvey with Cant, and C. Russell by Dalrymple.

²⁰⁵ Ives, p. 205. mentions Shewee previous to Nabon, as a small fishing-town. His account is not distinct.

²⁰⁶ See Dalrymple's Preface, p. 13, note.

²⁰⁷ The reason for supposing Shevoo may be misapplied is its resemblance to Sherouw and Chetow, at Sherouw below Darabin. Van Keulen writes, *hier is water van kuylen*, in pits or tanks.

Mount Okhus to Nabon by the journal is fifty-three miles divided into two courses, one of four hundred and fifty²⁰⁸, the other of four hundred stadia, and agrees with M'Cluer's corrected chart within three miles; we cannot, therefore, commit any error that affects the series, in placing Apostani by the measure given, or reducing it to the Shevoo of Captain Simmons. The name itself has a Greek appearance, but is undoubtedly not Greek; nothing, therefore, forbids us to suppose it may be Abu-stan²⁰⁹, like Abu-schaib, Abu-shâhhr, and other similar compounds on the coast; or to assume a corruption justified by its locality, and derive it from Asbân. My own opinion inclines to the latter; and if this should meet with the approbation of Oriental readers, we are obliged to Mr. Niebuhr for first producing the name of this range, which solves three problems at once; the Dara of Ptolemy, the Darabin of modern geography, and the Apostani of Arrian, all from Dahhr-Asbân²¹⁰.

From Apostani the fleet weighed at night, and proceeded twenty-five miles to a bay, on the borders of which were seen scattered villages, adorned with palm-trees, and others yielding fruits²¹¹ similar to those of Greece. Here Nearchus anchored, under the projection of a cape which rose to a considerable height. The cape is manifestly Nabon, and the bay is formed by the mouth of the

—
A BAY at
CAPE
NABON.
January 9.
Hundredth
day.
—

²⁰⁸ Twenty-eight and twenty-five miles.

²⁰⁹ *The Sheiks' country.* Abu and Shek are equivalent in Abu-Schaib, Schech-Schaib.

²¹⁰ In addition to what has been already said upon Bah and Dah, it appears from Ludolphus, that they have an opposition in the Abyssinian language; as Bahr, the *sea*; Bahr-Nagash, the governor or king of the *sea* coast; and Dahr is in the same dialect Daber, or Dabra, a mountain; both, by that author,

supposed to be connected with the Arabic. In my own opinion, the primary sense of Dahr is *head*; and thence, Dara or Darius, a king. Dar, a *head* officer; Dahr, the *summit* of a mountain. See Ludolphus Abyssinia, book i. c. 4. book iii. c. 4. And Bruce *passim*.

²¹¹ ἀκρόδρυα. Salmastius says, only nuts, almonds, and such as have a shell without and fruit within, p. 108, et seq. But see Theophrastus: ἀμπέλως, καὶ τὰλλα ἀκρόδρυα, *ibid*.

river which bears the same title. The point of this cape²¹² is very remarkable, being flat table land, which extends a considerable way, and then breaks off to a sharp sloping point, which makes the table land appear lower than it is; the river which comes in here runs parallel with the coast, and is at present the residence of an Arab Sheik, who is master of a few small vessels, which he employs in piracy. Thevenot²¹³ mentions it as a place still abounding in palm-trees, with a village on a low bank of the river; and the high land commencing near the cape extends far inland. The term used by Arrian expresses the anchorage of the fleet under cover of the table land at the foot of the mountain; which, with the circumstances of a bay, villages, and fruit-trees²¹⁴, makes the correspondence exact. It has been observed already, that here is the Bagrada of Ptolemy, which he places in latitude $28^{\circ} 4'$, and the head of it in $30^{\circ} 6'$, but by its course at the cape it ought to incline in the contrary direction, though I can find no information either in travellers or voyagers to give it any fixed position. That the coast is little frequented appears by the discordance of the charts, and the routes inland tend to Benderreek, Lar, or Gomeroon, either on the east or west, with little attraction even for merchants either to Nachelo²¹⁵ or Nabon. The latitude of Nabon is fixed by Dalrymple for $27^{\circ} 27' 26''$.

²¹² Lieutenant M'Cluer, p. 21. Lieutenant Cant, p. 22. In Mr. Dalrymple's Collection.

²¹³ D'Anville; but I have not found the passage in Thevenot.

²¹⁴ Mr. Jones mentions the Nabon as a large river; and such it ought to be from the extent of the mountains. Ives notices the same circumstance, p. 205. Here Providence seems to have allotted a spot of ground amidst

inhospitable rocks and deserts, capable of affording the kind production of vegetables, &c. &c. Ives, p. 205. In the river, a ship of nine hundred tons may ride. The Portuguese had once a settlement here, *ibid*.

²¹⁵ Pietro della Vallé mentions some Armenians who intended to land at Nachelo in order to go to Schiras. Vol. viii. p. 20. This route falls into the ancient road to Siraff. Nub. Geo. p. 125.

Upon departing from Nabon, the fleet proceeded upwards of thirty-seven miles to Gogana, a distance which answers within a mile to the position of the modern Konkûn or Congoon, remarked by M'Cluer for a high ground over it called Barn-hill from its appearance, and as being the northernmost town in the bay²¹⁶, which curves to Verdistan. Between Nabon and Konkûn lie Affelo and Tahrie; whence, he says, this bay runs deep up to Konkûn. The whole of this day's course is sheltered from the north-west blasts by the projection of Cape Verdistan, and the foul ground in its neighbourhood. This ground is noticed by the journal, as lying round the anchorage in a circle, and discovering itself with a dangerous appearance at low water. Gogana is described as a place inhabited upon the side of a winter torrent called Areon, in the mouth of which the fleet anchored with great difficulty, both on account of the narrowness of the entrance, and the dangerous shoals which almost preclude an approach to it. This torrent does not appear in any chart or map, except d'Anville's, in which it is doubtless placed from the authority of the journal, and probably exists in reality, though, from the little knowledge we have of this tract²¹⁷, or the insignificance of the stream, it has not drawn the attention of our English navigators. It is some satisfaction, however, to find a name resembling Konkûn so nearly as Gogana; and as Niebuhr makes it the residence of an Arab Sheik, it is perhaps of more estimation with the natives than with those who frequent the gulph, and whose only object is commerce.

GOGANA.
January 10.
Hundred and
first day.
Day allowed.

²¹⁶ Astola, Taurie, M'Cluer, p. 22.

See Niebuhr also, who says it is the most dangerous part of the gulph.

²¹⁷ "A vessel must be cautious of standing up too far in this bay." M'Cluer, p. 22.

SITAKUS
RIVER.
January 11.
Hundred and
second day.
Day allowed.

The course of the following day was fifty miles to the Sitakus, which it would be well if the journal had increased considerably, for the coast itself measures that distance, without allowing for the circle that must be taken round the shoal off Cape Verdistan. It is not probable that an English vessel should ever determine whether there is a passage within the breakers; but within, undoubtedly, Nearchus must have failed, to make the stadia consistent: and though M'Cluer makes an anchorage almost in the centre of them, a passage close to shore must be dubious, unless it could be proved that it is still practicable for native vessels. There is an island called Mongella²¹⁸, lying to the eastward of Verdistan, only three miles from the main, within which if there be a passage, it must have been seen by the fleet: but that it is passed in silence, or the cape itself, is no proof that Nearchus stood out to sea; for omissions of this sort are frequent. It is only meant to argue, that if there is a passage within²¹⁹ the shoal, the measure of Arrian is correct; if there is no passage, it is the first on this coast which has been deficient. Mongella is the Palmeira of the Portuguese, the Om-en-châle²²⁰ of Niebuhr, though he marks no island, and his Ras-el-chân, or Cape Chân, is the Kenn of our English charts, the Kaneh-Sitan of d'Anville, remarkable for the hummocks over it, which form a landmark to vessels upon their approach to Verdistan: here is the anchorage of the journal at the Sitakus, a stream which d'Anville calls Sita-Reghian; and I shall conclude my observations on the course with noticing, that as the tide rises²²¹ ten feet here, it is possible that Nearchus found his way through the

²¹⁸ Om-en-châle of Niebuhr.

²¹⁹ "From Mongella northward to the bay, in by Kenn, I never have examined in any vessel." M'Cluer, p. 25.

²²⁰ Rather an island. Om-en-châle, answering to an Om-en-châle on the continent. Nieb. vol. ii. p. 168. French edit.

²²¹ M'Cluer.

breakers,

breakers²²², shoals, and oozy channels, he so graphically describes: such, he says, was the nature of the coast, and such it appears in the charts at the distance of two thousand years: but if the approach to this station was difficult, the anchorage was indifferent; the fleet, however, wanted repair, the vessels were consequently drawn on shore, and the time employed in refitting and careening was no less than one-and-twenty days; during which interval, they received a large supply of corn, sent down by the command of Alexander. From this circumstance we may conclude, that the detachment under Hephæstion was in the neighbourhood; and, (as I collect from Alfragani²²³, Golius, d'Anville, and Otter²²⁴), at Giouar, or Firouzabad, an inland city, the capital of the district Ardeshir, celebrated for its gardens, vineyards, and roses, as pre-eminent in Persia as those of Pæstum in Italy. I fix upon this place, because I learn from Otter, that the river of Giouar receives a stream called Sita Rhegian²²⁵, which may be interpreted the sandy Sita, and, with a final aspirate, becomes Sitahh, or the Sitak of Nearchus. The Eastern writers mention, that Alexander took this city by inundating it with the waters of the river; this could not happen; for Alexander himself was on the other side of the mountains; but his army under Hephæstion might have taken it by this method; and the permanence of the tradition affords some sort of proof, that Hephæstion was at this city, as I have stated. The roads which branch out from this centre evidently mark it as a capital; and when

²²² βράχια, shoals; ἐνχλια, broken water; city. Gour signifies a sepulchre.
 Τινάγρια, shoals with ooze or mud.

²²³ Gol. ad Alfragan, p. 114. Founded by Ardexir, son of Babec, son of Safun. An Elburz, or fire-tower of the Parrees, was in this
²²⁴ Otter, vol. i. p. 191. I found this account by accident in Otter, strangely placed in a route from Hamadan to Isfahan.
²²⁵ Raiguian. Otter.

we reflect that Siraff and Keish were formerly the Gomeroon and Ormus of the gulph, we see the necessity of the communications extending from this centre to the coast at Siraff, and inland to Shiras; to Lar on the east, and to Reghian on the north-west; in this latter line it is evident that Hephæstion, with his division of the army, moved. We have before attended him across the mountains from Giroft to Lar, and we have here a route from Lar through Giouar²²⁶ and Kazon to Ragian on the river Tab or Endian, which is the boundary between Persis and Sufiana. In Sufiana Hephæstion rejoined the main army under Alexander, who seems to have moved by the route of Velaz-Gherd, the western Phoreg Pasagardæ, and Persepolis, till he fell into the march by which Timur came from Sufiana to Shiraz, and trod this ground in a contrary direction, till he reached Susa or Shuster, the ancient as well as the modern capital of the province. These marches of the two divisions will be farther considered hereafter upon the arrival of the fleet at Susa; at present they are only noticed, in order to connect the motions of the fleet and army, upon occasion of the supply received at Sitakus. The time which the fleet continued here is longer than any interval hitherto employed upon the refitting of the vessels; and we ought for this reason to suppose that they waited for the approach of the army, or the collection of the supply. The reason of this must evidently be, that the distance from Giroft to Giouar is upwards of three hundred miles, a march which, in this climate, could hardly require less than four or five and twenty days, even if Hephæstion moved on the same day with Nearchus;

²²⁶ In the route of Al-Edrisi, from Shiras Giouar, though Lar is on the left, and not to Siraff, we discover the road from Lar to mentioned. See *infra*.

eleven²²⁷ days' navigation, therefore, and twenty-one days in port, give a period almost necessary for the service required; and this allowance combines the motion of the fleet and army in a manner agreeably to reason, and not contradictory to the history of the transactions.

Cape Verdistan²²⁸, with its shoal tending out to Kenn, is one of the most prominent features in the gulph: English vessels, however, which are generally bound to Busheer, or Basra, having no other business but to avoid²²⁹ it, we have no right to expect any immediate account of the coast itself at this point: but the anchorage at Sitakus, d'Anville has elucidated²³⁰ with particular attention; Kaneh Sitan, he informs us, signifies the habitation of Satan; and the river Sita-Reghian²³¹ has evidently an allusion to the same prince of darkness; an extraordinary instance of his early influence in this country, and the duration of his empire. Whether Nearchus found the territory of Satan an agreeable residence for one-and-twenty days, I pretend not to determine; but, from the good-will I bear him, I regret to find him in a place with a name of such ill omen. Reghian is not quite perspicuous, as there is another Reghian on the Tab or Endian, and a Bender-Regh, which is the Rhogonis of Arrian. It is probable that the etymology of the word, which signifies sand, will explain all three; but I have looked in vain for more Reghians than one in the Nubian Geo-

²²⁷ Twelve days inclusive.

²²⁸ Bardestan, Bardestrand, Van Keulen, Babestan, D'Apres, 1745. Burdistan, Cap-

per; who calls it a mountain.

²²⁹ See M'Cluer, p. 24, 25. All his directions are how to avoid it with safety.

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²³¹ The Sitiagogus of Pliny, p. 136. lib. vi. 22. deserves no notice; he says it is navigable up to Pasagarda.

grapher. The Giouar of that author on this river²³² throws great light on the march of Hephæstion, and the supply received by the fleet, because the measures taken from Shiras, Kazeron, Siraff, and Reghian on the Tab, all correspond with some degree of correctness, and the use Mr. d'Anville has made of these in his first map of Asia bears the highest testimony to his judgment and penetration. It is upon this occasion that he introduces his remarks upon the rivers of Persis, demonstrating that none of them beyond the mountains ever find their way to the sea; and shewing that those which have occurred in Arrian bear the characteristic mark of torrents, as he describes them, never rising beyond the great range, and fed only by the rains which fall there too periodically to support a perennial stream. When we see the face of nature painted so justly, who shall assert that the journal before us is the production of a Greek sophist in his closet? One circumstance only surprises me in d'Anville, which is, that he should mistake the Bagrada of Ptolemy, for as he has himself placed the Taoké of that author, with great apparent propriety, at Gennaba, and his Chersonesus at Busheer, or Bender-Rischer, his Brisoana ought to be the river at Kierazin, to which it bears a relation, however corrupted; his Ausinza²³³ naturally becomes Aufizan, or Verdi-stan, and Bagrada of course is the next river²³⁴ at Cape Nabon. In tracing Ptolemy's catalogue thus from Cape Jacques to the termination of Persis, I persuade myself that I not only add perspicuity to this immediate work, but perform a service useful to geography, and acceptable to every lover of the science.

²³² Al-Edrisi does not mention the river.

²³³ Written Stausinda by Marcian, p. 19.

²³⁴ There is no other between Verdistan and

Nabon but the torrent Areon, too minute for all our charts and maps to notice.

An interval of one-and-twenty days passed at Sitakus, brings our account to the first of February, and on this day I fix the departure of the fleet for Hieratis. The course is nearly forty-seven miles, which terminates at the Gilla or Halilah of M'Cluer, with a sufficient degree of correctness, and where d'Anville finds the Kierazin²³⁵ of the Turkish Geographer. The fleet anchored in the mouth of a canal called Heratemis, cut from a larger river at no great distance, which is doubtless the stream that comes from Kazon²³⁶; and Kazon as undoubtedly is the root of all the corruptions which appear under the form of Kierazin, Hieratis, and the Zezarine of the English charts. The stream²³⁷ itself, in its source at least, which is near the foot of the mountains, is possibly that called Abghine²³⁸ by Thevenot, and was passed by him in the neighbourhood of Karzerum²³⁹ (as he writes it), in his route from Schiras to Bender-Regh. The variations occurring in this name flow two different ways from the same source, for Kazeroun²⁴⁰ first becomes Kazerene, Kezarene, Zezarene, Brizoenè²⁴¹; and secondly, Kerezene, Kierazin, Kierad-fin, Hierat-fin, Hierat-is, and perhaps Heraten-is, or Heratemis: but I do not maintain that both are the

HIERATIS.
February 1.
Hundred and
twenty-third
day.

²³⁵ This is the only mark I find in his chart. Gilla is a town. Halilah, or Halilat, a hill, which serves as a direction for entering Busheer Harbour. It takes its name from the town marked Halila in Niebuhr.

²³⁶ See Koufher of Thevenot, Niebuhr, &c.

²³⁷ Kazon has an additional title, the country of Sapor; and is the head of that division of Persis called Sabur, or Sapor, by d'Anville. Gol. ad Alfragan, p. 115. not. It is not, however, the capital, for that he calls Sabura.

²³⁸ Nothing certain can be fixed on the interior course of these rivers.

²³⁹ Thevenot, part ii. p. 149. It flows within a mile and a half of the town, and was apparently passed by a bridge about six miles lower. The town is large, but ill built.

²⁴⁰ Written Kazarun by Al-Edrisi, p. 125.

²⁴¹ This is, I conjecture, the relation which Ptolemy's and Marcian's Brisoana has with Kezarene; but it is mere conjecture.

fame, for Kazeroon²⁴² is upwards of fifty miles inland, and the Kierazin of the Turkish Geographer is on the coast; but I suppose both to be connected by means of the district or the river. D'Anville has observed, that Kierazin on the coast appears not in the modern maps, but that the name exists in our English charts under the form of Zezarine, applied to an islet nearly fifty miles out at sea. This is true; but at the time he wrote, neither this isle, nor another called Kenn, were laid down with any degree of correctness. We have since obtained their position, from an observation of Captain Moore; Kenn²⁴³ in latitude $27^{\circ} 54'$, and Zezarine in $28^{\circ} 8'$. Kenn is a round bank of sand scarcely half a mile in length, and Zezarine²⁴⁴ something larger, with a rock in the middle; both are sixteen or seventeen leagues from the coast. Kenn is likewise called the Cock, or Persia, and Zezarine, Arabia, by the native pilots. And here is a circumstance worthy of remark, which, though it escaped the notice of d'Anville, speaks highly for the penetration manifested in his reference; for Zezarine, the isle, is as certainly connected with a Zezarine on the main, as Kenn is with his Kaneh-Sitan, the Kenn of our English charts. There is another solitary isle called May, upwards of sixty leagues from the coast, in latitude $25^{\circ} 50'$, which I mention, in order to shew the perpetual connexion of these little spots with the main; for Al-Edrifi fixes a Mai in the road from Shiras to Siraff, to which this islet is nearly opposite, and

²⁴² After making this conjecture, I was gratified in finding a demonstration of it in Otter, vol. i. p. 310. where he writes Kiaziran, Kiaziroun, as the strict Oriental orthography of Kazerun. This, at the same time it proves the perpetual transposition of syllables (so often noticed), as of Kiaziran for d'Anville's Kie-

razin, unites it with Kezareen and Zezareen, most perfectly. The connexion, therefore, of the town with the river and the shoal is established.

²⁴³ Dalrymple's Collection, p. 46.

²⁴⁴ Keyn and Zazareen, M'Cluer.

to which it is probably related. I expected to find a Kierazin also in Al-Edrifi, but his routes are always the journals of the caravans, and we seldom have any delineation of the coast.

Arrian has no particulars of Hieratis; but that it was on an island formed by a channel from a river in the neighbourhood, and that an island of this sort, resembling the delta of a river, should not appear in our English charts is not extraordinary, because it would naturally be confounded with the coast; but Mr. d'Anville places an island here, which he writes Cousher, and which is the Coucher of Thevenot. He did not land here; but he says it is a pretty large island, and enables us to form a conjecture of its distance from Busheer, by mentioning that he passed that port between two or three o'clock in morning, and was off Coucher at half an hour after seven. I trace an account which corresponds with this in Niebuhr, who upon his arrival at Kormudsch, in his route from Busheer to Schiras, mentions an arm that runs up from Busheer²⁴⁵ into the interior of the country, then turns itself to the south, and falls again into the gulph lower down towards the east. At the place where this stream ought to fall in, his map presents us with Khôre-Efferi, and as Khôre signifies a channel, or division, I have little doubt but this is the Hera-temis of Arrian, and that Khor-esser²⁴⁶ is the Koucher of Thevenot. It is true that Niebuhr is not accurate in his account of the arm which comes²⁴⁷ from Busheer, for there is no such arm, as Mr. Jones assures me, who resided at Busheer many years; and it is extraordinary that Niebuhr should insert this arm in his own chart²⁴⁸,

²⁴⁵ Niebuhr, vol. ii. p. 81.

²⁴⁶ Khôre-Efferi is literally the channel of Effer, and Effer doubtless has a relative sense.

²⁴⁷ I use his own term, but it is more pro-

perly a large arm which he makes fall into Busheer Bay. See his map.

²⁴⁸ Vol. ii. p. 97. Amst. edit.

and yet give us Captain Simmons's chart²⁴⁹, in which no river larger than a brook is to be found. As Niebuhr never saw this Khôre-Efferi therefore all that we can collect, is, that he gained intelligence from inquiry among the natives, that the circumstance of a river inclosing a delta between two of its mouths existed, and that the eastern channel was called Khôre-Efferi. This, for want of further information, he was obliged to lay down with uncertainty; but that some stream, attended with these circumstances, does fall into the gulph, within the distance of from ten to twenty miles eastward of Busheer, I make little doubt, and such a stream will answer to the Hieratis and Heratemis of Arrian. Mr. Jones is acquainted with a shallow arm of the sea running inland near Halila; and though he doubts the circumstances here attributed to it, it is not impossible that this arm should send off a channel to the eastward.

—————
MESAM-
BRIA TOWN.
PADARGUS.
PADAGRUS
River.
February 2.
Hundred and
twenty-fourth
day.
—————

From Hieratis the fleet proceeded the following morning to Mesambria, and anchored at the mouth of the torrent called Padargus. The whole place, says Arrian, is a peninsula, which points out Busheer or Bender Rischer most correctly; and here there is no distance given, a circumstance²⁵⁰ recurring constantly whenever the fleet passes a cape, and anchors immediately under the shelter it affords. I should conclude, therefore, if d'Anville does not stand in my way, that Hieratis was at no great distance from the back of this cape to the eastward; that they had anchored there only because they could not double the cape the preceding evening, and had sailed into port as soon as they had day-light. These circumstances do not greatly disagree with the situation Thevenot gives to Koucher, and

²⁴⁹ Vol. ii. p. 75.

²⁵⁰ See anchorages after passing Mount Eirus, Jask, and Tarfia.

contribute to relieve the obscurity attendant upon this part of the coast.

Busheer varies as much in its orthography as any place²³¹ within the gulph, for it is written Rusheer and Rischer, now generally applied to the old town, or a fort, which, with the addition of Bender, or port, gives it all the different forms it has in the charts; but last of all comes Niebuhr, who writes it Abu-Shâhhr²³², with Rischâhhr at a greater distance than it ought to be; and thus, probably from his better knowledge of the language, we have the proper name at last.

Whence the Mesambria of Arrian is deduced does not immediately appear, for though the word is expressive of *noon* in Greek, we may be assured its origin is not from that language. Arrian describes it as a Chersonese, and Ptolemy and Marcian use that term only without the addition of a name; this induces me to conjecture that both merely translated the native term Mesambria. Now it will appear hereafter that Mesen signifies an island, and is applied as such to a Mesene on the Schat-el-Arab, to another in Mesopotamia, and to a Muçan in the Sinus Mesanius of Ptolemy. This word, therefore, with the addition of Bar, a *continent*²³³, which we obtain from Montfaucon, produces Mesen-bar-ia, corresponding literally with the Greek term Cherfo-nese²³⁴. I give this only as a conjecture, though the circumstances of the place persuade me that it is something more; and, in support of this opinion, I refer to Captain Simmons's plan²³⁵ of Busheer, by whose assistance I can

²³¹ Reixel by the Portuguese, who had a fort here. Abbeseer, Van Keulen.

²³² Or Abu-Schæhhr.

²³³ See *supra*, p. 248.

²³⁴ From χερσος, a continent; νησος, an island, a peninsula.

²³⁵ Published by Mr. Dalrymple, and copied in Niebuhr. Voyage, tom. ii.

carry

carry Nearchus to his moorings in the port, as readily as if I were upon the spot; for in that plan there is a place marked as the watering village, within a mile of an insignificant stream corresponding with the Padargus of Arrian, and in the interval between these two points I suppose the fleet to anchor.

Busheer has been latterly much more frequented by the English than Gomeroon, or any port in the gulph except Basra, for they had a factory here as late as the year one thousand seven hundred and sixty-five, and I know not that it is yet abandoned. The town occupies the triangle at the cape, with a fort usually called the Old Town, and sometimes Rischer, at the back of the cape, near five miles distance. The cape is joined to the main by a neck, the narrowest part of which is at the torrent Padargus, forming the Chersonese mentioned by Ptolemy and Arrian; but Niebuhr²⁵⁶ observes, that the country is sometimes overflowed, so that the town is situated alternately on the continent and on an island²⁵⁷; but it is not a little remarkable, that out of three witnesses who have been on the spot, two²⁵⁸ should assert that the town is walled, as it appears in Captain Simmons's drawing; and a third, M'Cluer, maintain, that there are not the least marks of defence about the place. It ought not to be omitted that the gardens or plantations which decorate Captain Simmons's chart are noticed by Arrian²⁵⁹ in a pointed manner, as if the goodness of the soil had produced the same cultivation so many ages ago, as cheers the country in the present declining state of Persia. This, however, is denied by

²⁵⁶ Thevenot calls it an island, Part ii.

p. 172.

²⁵⁷ Dalrymple's Preface, p. xviii.

²⁵⁸ Captain Simmons and Niebuhr.

²⁵⁹ *ἐν αὐτῷ κήποι τε πολλοί, καὶ ἀγροδένδρα παντῶν ἐφύετο*, p. 354.

M'Cluer,

M'Cluer, who calls the neck a sandy desert, and never cultivated, which is a second instance of contradiction in two eye-witnesses, and respecting the same place. Mr. Jones also confirms the testimony of M'Cluer, and contradicts the assertion of Niebuhr, where he mentions that the neck is overflowed. The country as far as Busheer is still called Kermesir by Niebuhr, that is, the low land, though we see in the drawings here the high land of Halila, as we do at several other points along the coast, at Kenn, Nabon, &c. but which are not sufficient to invalidate the title, or perhaps worthy to compare with the grand²⁶⁰ ridge which runs inland in a line with the coast. This district, Niebuhr informs us, is inhabited by Arabs, not of the tribe of Beni-Houle, which prevails from Gome-roon to Konkun, but by two clans of long standing, and a third which has intruded itself into the government, named Matarisch, the head of which was in his time Sheik Naser, a chief who had degraded himself by marrying a Persian, and professing himself of the sect of Ali. He possessed a large territory in Kermesir and the island Bahrein, but was a feudatory of Kerim Khan, the master of Shiras. The harbour²⁶¹ is commodious, and vessels ride close to the houses, which induced Nadir Shah²⁶² to have a fleet here in the latter end of his reign, when he had quarrelled with the Sheiks on this side of the gulph, and wanted to interfere with those of Oman and Mascat on the opposite coast.

The mean latitude of Busheer is given by Mr. Dalrymple at $28^{\circ} 38' 20''$, which perhaps ought to be read $28^{\circ} 58' 20''$, for

²⁶⁰ Every route and journal bears testimony to the course of this ridge, and the branches from it. Consult Thevenot, Tavernier, Francklin, Cheref-eddin, and Al-Edrisi, Ras-al-Acbé, *summitatem montis*, p. 125.

²⁶¹ Niebuhr, Eng. edit. vol. ii. p. 145.

M'Cluer does not speak so well of it:

²⁶² See Otter, vol. ii. and J. Hanway's Nadir Shah; but he had no better success against the Arabs than others who have attacked them.

M'Cluer carries it above 29° as well as d'Anville, and d'Anville has shewn as much judgment in correcting this position with bad information to work upon, as in any part of his valuable memoir.

TAOKE
Town.
GRANIS
River.
February 3.
Hundred and
twenty-fifth
day.

When the fleet left Mesambria it proceeded only twelve miles and a half to Taoké, for which I do not allow a day, nor do I think one due. Neither will the distance to Taoké agree, though the double distance of twice twelve miles and a half to Rhogonis, or Bender-Regh, approaches very nearly to correctness; for the bay of Busheer is fourteen or fifteen miles across to the northern point called Rowhla and Rohilla by M'Cluer; and the river Granis, for which he allots a place, is not five miles from Bender-Regh. If, however, the two distances agree, though neither of them singly is correct, we may account for it from the circumstance of their employment in the former part of their course, which was the examination of a dead whale, that seems apparently to have floated up to Rohilla point, and to have grounded on the sands in its neighbourhood. Some of the people approached near enough to measure this monster, and reported it to be fifty cubits long, with a hide²⁶³ a cubit in thickness, beset with shell-fish, barnacles²⁶⁴, and sea-weeds, and attended by dolphins larger than are ever seen in the Mediterranean. As this is the second appearance of the whale in these seas, I have not thought myself authorised to omit the circumstance; but as this animal was seen dead, and in a state of decay, he might be deemed rather an inhabitant of the ocean driven up the gulph by the wind or currents. The condition in which he was found I leave to the discussion of the natural historians, or those acquainted with the appearance of the animal in his native regions.

²⁶³ δέρμα φολιδωτόν. *Scaly*, in common acceptance, but I have not dared to admit it.

²⁶⁴ λοπάδες. *Patellæ* genus. Limpets perhaps.

The mouth of the river at which the fleet first anchored is noticed in our English charts, and fixed by d'Anville for the Boschavir, down the borders of which Thevenot travelled in his route from Shiraz to Bender-Regh; and Taoké answers to the Tauag of the Nubian Geographer, who places it not upon the coast, but, as Arrian²⁶⁵ does, a few miles up the stream, thirty-six miles from Kazon, and the same distance from Gennaba, on the river²⁶⁶ of that name. Ptolemy has a Taoké, which is farther to the north; and Strabo mentions a palace of the kings of Persia on the sea-coast of Persis, by the name of Oké²⁶⁷, which is either a corruption or an integral part of Ta-oké. Thevenot²⁶⁸ describes the river as large, broad, and deep, and adds, that it falls into the gulph near Bender-Regh; but that its mouth is to the southward of that town, and correspondent to the Granis of Arrian, appears from the circumstance of Thevenot's crossing it to the right for the last time, in his way to that town, after having travelled on its bank at intervals for some time, and crossing it repeatedly in the higher part of its course: in winter, he says, it is not fordable²⁶⁹.

This river is marked with great precision in M'Cluer's small chart of the head of the gulph, with a place called Nuchlat²⁷⁰ at its entrance, and here, allowing for the error of half the course, there

²⁶⁵ Two hundred stadia, almost thirteen miles.

²⁶⁶ Called Ab-Shirin by d'Anville. The distance corresponds not at all.

²⁶⁷ τὰ κατὰ τὴν Ὀκύν. Lib. xv. p. 728. D'Anville.

²⁶⁸ Part ii. p. 148. Eng. edit.

²⁶⁹ Colonel Capper's journal mentions a ruin still visible from the sea, inland on the mountains of Bang, which the natives say

was built by the Greeks, and formerly impregnable. Greeks or Persians are to them alike, and it is possible here may be the remains of Taoké seen from Bang, which is Ptolemy's Taoké, and yet approachable by the river, agreeable to Arrian's account. Capper, 232.

²⁷⁰ We do not find the title of Bender Boschavir, which d'Anville gives to this road in any of our English charts.

can be no mistake in fixing the Granis of Arrian. Whether the Granis is the same stream as the Boschavir of d'Anville and Thevenot I cannot positively determine, but that it is the river that comes from Grâ, and takes its name from that place, I have the testimony of Niebuhr²⁷¹. "On the second of March," he says, "we passed a river which joins several others, then takes its course towards Grâ, and discharges itself into the Gulph of Persia, between Abu-Sehahr and Bender-Regh." This is the river M'Cluer marks by Nuchlat; it is the only one between Busheer and Bender-Regh, and it can be no other than the Granis of Arrian. So far as concerns the mouth of this stream I have no hesitation, but a great difficulty arises from the position of Grâ and Kazeron inland. By their site, the river²⁷² at Kazeron ought to come to the westward of Busheer, and the river at Grâ to the eastward, but I carry the Kazeron stream to Hieratis, and that of Grâ to Taoké or Nuchlat; and this I am persuaded is their course; but I dare not assert it in opposition to d'Anville, Niebuhr, and other evidence. It must, therefore, remain a problem in geography till the interior of the country is better known, for I can find no route that crosses these several streams at right angles; and, till that shall be accomplished, their relative situation cannot be determined.

RHOGONIS.
February 3.
Hundred and
twenty-fifth
day.

From Taoké, I make the fleet proceed the same day to Rhogonis, the modern Bender-Regh²⁷³, and the Bundereek of our charts; its name implies the Sandy Port or Harbour, for such it is, and the soil

²⁷¹ Niebuhr, vol. ii. p. 91. Amst. edit. This passage is totally inconsistent with his map, where he brings the river from Grâ into the bay of Busheer.

²⁷² This is true only if Niebuhr's map is

correct; for d'Anville places Kazeron, as I do, at the head of the stream Hieratis. Niebuhr's map is so incorrect on the coast, that there is reason to doubt its precision inland.

²⁷³ Bender Rigk. Niebuhr.

about

about it is all sand. Thevenot, who came down from Shiraz to embark here for Basra, informs us, that the town is built along the sea side, at a place where it runs into a narrow channel, long and winding, but is not deep; and if he had wished to describe a circumstance in conformity with Arrian, he could not have succeeded better, for here the journal indicates a winter torrent and a safe road ²⁷⁴, which in our charts is protected by an island in the form of a shuttle. On this head, the journal is silent. It is remarkable that Thevenot should add, that it is a day's sail from Bender-Risher, or Busheer, as I have made it; and though I allow that four hundred stadia, or twenty-five miles, is a short day's work, yet it should seem that, as it is from port to port, the natives consider it as such in the present age, as well as in the time of Nearchus. In the term Regh ²⁷⁵, or sandy, we discover the Rhog-onis of Arrian, and a river called Rhog-omanis by Ptolemy, which d'Anville supposes to be the Ab-Shirin of Cheref-eddin, a stream that enters the gulph about twenty miles to the north of Bender-Regh, marked Gunowah by M'Cluer, and from which d'Anville derives a branch, that is to correspond with the torrent of Arrian at this station. On what authority this is built I know not, and the testimony of Thevenot without it is complete.

Bender-Regh was apparently the port of communication between Shiraz and Basra, but was always out of the way of ships bound up the gulph, which took their pilot at Busheer, or Karack; besides this, there has been another reason of late years for their not fre-

²⁷⁴ The road is formed by an island, and covers a narrow winding channel as Thevenot describes. The river falls in as near as possible to the south-west angle of the town. Thus it is described in a manuscript draft of Lieutenant Mascall's in Mr. Dalrymple's possession.

²⁷⁵ It is the same term as occurs in Bombareek, Bom-ba-regh, Sable delié of Pietro della Vallé; and this name is usually written Bendereek, like Bombareek.

quenting it, for it was subject to a petty tyrant Mir Mahenna²⁷⁶, whose hands were imbrued in the blood of a father, a brother, of two sisters, and of his own children, and who wanted nothing but extent of dominion to make him as great a murderer as Zingis Khan or Nadir Shah. It was this Arab who took Karack from the Dutch in the year one thousand seven hundred and sixty-five, after they had been in possession of it about eleven years²⁷⁷. The Dutch appear never to have found the advantage of holding this island equal to the expence of maintaining it; or else we may well suppose it would have been better fortified than to permit such a chief as Mir Mahenna to wrest it from them. There was, indeed, some trade here, and some confluence of the natives from both sides of the gulph; for they are willing to settle wherever they can find protection; but the reduced condition of Persia, and the perpetual fluctuation of authority at Basra, must, as long as they shall continue, keep the commerce of the gulph in a precarious state, and prevent the rising of any establishment, either here or on the other islands, to the dignity or rank of Ormuz. Karack²⁷⁸ is the larger of two islands which lie between latitude 29° 10' and 29° 22', off the headland between Busheer and Bender-Regh, abounding in fish and dates, but without corn²⁷⁹; and here it has long been the practice of the gulph to take a pilot for Basra. The smaller of the two is named Corgo in our charts, and Khouéri²⁸⁰ by Niebuhr; at the north end is the watering place, where forty English were cut off by Mir

²⁷⁶ Niebuhr says, he did not kill his father, but suffered him to be killed in his presence.

²⁷⁷ See the detail of this in Niebuhr, French edition of Amsterdam, p. 149. vol. ii.

²⁷⁸ Charedsch of Niebuhr; and Charedsch

in Foskat's Vocabulary, signifies *au dehors, the off island*.

²⁷⁹ M'Cluer. But Thevenot says it produces corn.

²⁸⁰ Khoué:i means *division or district*; the isle, perhaps, *separated* from Karak.

Mahenna in the year one thousand seven hundred and sixty-eight. They were however enemies, and do not so much inflame the account of his cruelties, as his domestic tragedies. Tyrant as he was, with all this blood upon his head, he was not yet thirty years old in the year one thousand seven hundred and sixty-five, when Niebuhr was at Karack; but this monster was afterwards obliged to fly from Bender-Regh to Basra, on account of his cruelties, where his head was cut off by the Mutasillim, and sent to Bagdat²⁸¹. Mr. Dalrymple has published a plan of both these islands from a French manuscript, taken in the year one thousand seven hundred and eighty-seven.

From Rhogonis, the next day's course was twenty-five miles to Brizana, a winter torrent, where it was difficult to find anchorage, on account of the breakers, shoals, and surf upon the coast. These, however, were surmounted upon the tide of flood, but upon the ebb the vessels were all left dry. If, therefore, we should be curious to investigate the question here, what might be the draft of a Greek penteconterus, or vessel of fifty oars, there are some data for determining it, for the flood rises in the upper part of the gulph nine or ten feet; and if this rise carried them over the breakers, we can hardly allow the largest vessel in the fleet to have drawn more than from six²⁸² to eight feet water.

At Brizana I anticipate the objections which will be made to my fixing the Brisoana of Ptolemy at Kierazin, which, from its similarity of name to the Brizana of Arrian, demands a position here; and one part of the objection will be very strong, for neither Pto-

BRIZANA
River.
February 4.
Hundred and
twenty-sixth
day.

²⁸¹ Niebuhr, vol. ii. Voyage. French edition of Amsterdam, p. 161. note; probably about 1770. ²⁸² They could not draw more, but might draw less, and that I believe is the truth.

lemy,

lemy, nor Marcian his copyist, take any notice of a Brizana here, but have only one name bearing a resemblance to it, and that not in this place. Before I attempt an answer, I must premise that I built nothing on the similarity of sound, which I derived from Kefareen, and I will now state the question on both sides as fairly as circumstances permit.

If the Brisoana of Ptolemy is to be the Brizana of Arrian, Ptolemy has misplaced it, and not Arrian; a kind of transposition which I have before suspected on the coast of the Ichthyophagi; and the reason why a preference is to be given to Arrian is self-evident, because a journal kept, and a course described from day to day, is much less liable to error than the account of a geographer residing at Alexandria, and reducing the relations which he received from written journals, or the oral information of navigators: but I do not think this transposition took place; for if d'Anville be mistaken in placing Ptolemy's Taoké at Cape Banc, though even that is hardly credible; neither he nor I can be mistaken in his Chersonese, for that is the very term used by Arrian, and there is but one Chersonese on the coast, which is at Busheer: and I now say that, on the authority of Ptolemy himself, his Brisoana succeeds Busheer, or the Chersonese, and not the Chersonese, Brisoana. His order stands thus:

Taoké,	-	Cape Banc.
Rhogomanis,	-	Bender-Regh.
Chersonesus Prom.		Busheer.
Ionaca,	-	_____.
Brisoana,	-	which ought to be Kierazin.

The latitudes, it is true, do not answer, but they are remarkably corrupt in this series, for the mouth of the Bragada, the last name

on

on his list, is in $21^{\circ} 54'$, and the source in $35^{\circ} 15'$. What stream can there be in the Kermesir, the source of which is fourteen degrees from the mouth? I rely, therefore, on the order, and not on the latitude; and in this I am justified by Marcian, for he measures from Taoké to Rhogomania, from Rhogomania to the Chersonese, from the Chersonese to Brisoana, six hundred and fifty stadia. Another circumstance confirms this; for the Brizana of Arrian lies between the Arosis and Rhogonis, and Marcian, in the space between Taoké and Rhogomania, mentions the island Sophath, the Sophtha of Ptolemy, which island is Karack; this therefore must prove, that the Rhogonis of Arrian and Rhogomanis of Ptolemy are the same; and if we are right as far as Rhogonis, we are hardly wrong in the remainder of the series. These are the reasons which induce me still to place Brisoana at Kierazin²⁸³, or Hieratis; and if I err, it is from my desire to make Ptolemy consistent with himself.

In settling the extent of this day's course by the journal, I should be happy to find a nearer correspondence than I do; Arrian calls it twenty-five miles, but the distance to Bender Delem, where d'Anville places Brizana, is upwards of thirty-five miles, and the distance to the Gunowah of our English charts is not twenty²⁸⁴, so that one is in excess, and the other too short to determine this position with certainty. Two rivers evidently fall into the gulph, one to the south and one to the north of Cape Banc, the Taoké of Ptolemy. That on the south d'Anville is surprised to find written Guenara; What would he think of our English Gunowah? And yet this is a corruption more to the sight than the ear; for Guenowa is Gennaba, with the w for the Persian b or v, and the open sound of the vowels.

²⁸³ D'Anville has not discussed this point, but he assigns Brisoana to Kierazin.

²⁸⁴ Not fifteen in d'Anville's map.

produced the insertion of R in Guenara, in whatever chart it appeared. Gennaba makes a conspicuous appearance in Al-Edrisi, Cheref-eddin, and Alfragani; I should prefer it therefore, if other circumstances agreed, to Bender Delem; and as there is no distance given for the next day's course, we may be the more at liberty to place Brizana either at the one or the other. There is a second consideration of more weight, which is, that our charts are less to be depended upon on this part of the coast than the lower; for as vessels now always go from Karack to Basra, and always did go either from this island, Busheer, or Bender-Regh, they have rarely touched upon the tract now before us, and, unless the wind is foul, do not make it. This is noticed by M'Cluer²⁸⁵, and he adds, in a letter²⁸⁶ to Mr. Dalrymple, that he found it necessary to shorten the distance between Karack and Basra Bar, ten miles. I mention this as a ground of uncertainty in respect to this coast: but M'Cluer assures us, that Bender Delem is still a place of resort for the country vessels, which favours d'Anville's opinion; and though M'Cluer does not place it upon the river north of Cape Banc, still that river must be the Brizana of Arrian, though we cannot reconcile the distance. The best proof of this is, the position of Taoké²⁸⁷ by Ptolemy, for he ends the province of Susiana with Oroatis, the Arofis of Arrian; and he commences Persis with this promontory, which, though not prominent, is the first characteristic feature on the coast: this is the Cape Banc of Niebuhr, the Bang of our English charts; and though Ptolemy omits both the rivers Delem and Guenowa, which fall in on different sides of it, a circumstance not usual,

²⁸⁵ Memoir, p. 31.

²⁸⁶ Preface, p. 16.

²⁸⁷ The route in Al-Edrisi is Kazerun, Rozaic, Taug, Gennaba, p. 125.

still his Rhogomanis and Cherfoneſe following, leave no doubt upon the propriety of fixing his Taoké at this cape, as there is no other till we come to Buſheer; and as we have not in any account, ancient or modern, notice of any ſtation between Delem and the Aroſis, there can be little hesitation in aſſigning this for the Brizana of Arrian.

Mr. d'Anville ſuppoſes Bender Delem to be at the mouth of the river, which its name implies, but our Engliſh charts carry it ſeventeen miles to the northward of it: and that Bender Delem is an object in the navigation of the gulph, I conclude from Thevenot, who, ſailing in a country ſhip from Bender-Regh to Baſra, undoubtedly purſued the ſame courſe as that by which Mazenes carried Nearchus; but as Thevenot notices Bender Delem while he paſſes Gennaba²⁸⁸, or Guenowah, in ſilence; the former is to be preferred for Arrian's Brizana, however the diſtance may fail. The river called Guenowah in our charts is ſuppoſed by d'Anville to be the Ab-Chirin²⁸⁹ of Cheref-eddin²⁹⁰; and ſuch, by the march of Timour, it appears; but the names of all theſe rivers are loſt to Europeans, becauſe our navigators name them all from the town they are near, in the ſame manner as Gunowah receives its title from Gennaba. It is in this reſpect that the geography of Cheref-eddin is valuable; for whatſoever river is paſſed in the route of the army may be depended upon at the point where it is paſſed, however he may be miſtaken in the report of its courſe above or

²⁸⁸ Giannaba of Al-Edriſi.

²⁸⁹ Sciniz of Al-Edriſi, 125. A mari non multum diſſita.

In the word Ab-Chirin there is ſomething to call in queſtion all our reaſoning on this point; for if Brizana is a corruption of Ab-Chirin, by dropping the A, as in Buſheer, Buſheab, &c; and if Ab-Chirin be really the river of Gennaba, or Guenowah, then this anchorage muſt be ſouth of Cape Banc, and not north; that Brizana is a reſemblance of

Ab Chirin, the river Chirin, I think for this reaſon: Chirin would be written Dsjirin in Perſic, and the Dsj paſſes generally into z; by tranſpoſition we ſhould then find Zirin or Rizin, and from the latter Ab-Rizin; from this again, Brizina or Brizana. I do not dare to inſiſt upon this; but if the courſe of the Ab-Chirin ſhould hereafter be fixed, I ſhould certainly aſſume Brizana as its representative.

²⁹⁰ Vol. ii. p. 185.

below; and this circumstance makes his work preferable to that of Al-Edrisi, who gives the towns on the route, but usually neglects the rivers. If rivers are the veins of the earth, they are the sinews of geography. I leave this station unwillingly without satisfactory elucidation; but, all circumstances considered, I at present subscribe to d'Anville's settlement of it at the river Delem.

—
AROSIS
River.
February 5.
Hundred and
twenty-
seventh day.
—

From Brizana, the next day's course is to the Arofis, a river sufficiently conspicuous, as being the boundary between Sufiana and Persis; a privilege it maintains in modern geography as well as ancient; and Arrian adds, that it was the largest of all the rivers which Nearchus had yet met with in the Gulph of Persia. It is called the Endian in our modern charts, from a town at no great distance from its mouth; and Ab-Argoün by Cheref-eddin; out of the component parts of which, Ar-osis preserves but a single syllable, and that perhaps not legitimately, for Ab-Argoün is ²⁹¹, as I suspect, Ab-Ragoun, the river of Ragoun or Ragian, a town of considerable importance on this stream, near five-and-thirty miles from the sea. In its lower part it is called Tab ²⁹² by the Oriental writers, who always speak of it as a stream of consequence, and Ab in this word is apparently the river, pre-eminently above others on the coast. Endian is a village, or rather a knot of villages, fifteen or sixteen miles from the sea, from whence this stream derives the name by which it is known to the Europeans. The course and nature of the Arofis ²⁹³ will be considered hereafter, with the other rivers of Sufiana, when we come to treat of that province; at present our concern is with the coast, and as no distance is given from

²⁹¹ Araghian. D'Anville. On the Tab there is a bridge a bow-shot from the town. Al-Edrisi. Ragian terminat Fares et Churestan estque urbs pulchra, p. 123.

²⁹² The Tab receives several rivers out of Khoufistan. Otter, vol. ii. p. 49. Who adds, that the province is very hot, but

abounds in dates, grain, fruits, sugar, &c.

²⁹³ Ex parte meridionali Churestan fluit amnis Tab, dividens ipsam Churestan a Fares, et omnes aquæ Churestan in unum confluentes. exonerant sese in mare prope urbem Mahruian, non procul ab arce Mohdi. Geog. Nub. p. 123.

Brizana to the Arofis, and one much too short from Rhogonis to Brizana, an obscurity rests upon this part of the course, which is not sufficiently elucidated by our modern charts. It is however necessary, as we are arrived at the termination of the province, to consider the total of Arrian's stadia, and examine how far they agree with, or differ from, the actual extent of the coast. The numbers, such as we have them in the journal, stand thus:

From the Centre of KATAIA, or KEISH

Ancient Name.	Modern Name.	Stadia.	Miles English.	Stadia allowed.	Miles Eng. allowed
To Ila or Kaikandros,	Inderabia,	400	25		
To an island ²⁹⁴ ,	Schitwar,	—	—	320	20
To the main ²⁹⁵ ,	—	40	2½		
To Ochus ²⁹⁶ ,	Darabin,	—	—	40	2½
To Apostani,	Asbân. Shevoo?	450	28		
To a bay,	Nabon River,	400	25		
To Gogana,	Konkûn,	600	37½		
To Sitakus,	Kenn,	800	50		
To Hieratis,	Kierazin,	750	46½		
To Mesambria ²⁹⁷ ,	Busheer,	—	—	400	25
To Taoké,	Nuchlat,	200	12½		
To Rhogonis,	Bender-Regh,	200	12½		
To Brizana ²⁹⁸ ,	Delem,	400	25		
To the Arofis ²⁹⁹ ,	Endian,	—	—	800	50
		4240	264½	1560	97½
	Stadia allowed,	1560			
	Total of stadia,	5800			
	Miles allowed,	—	97½		
	Total of miles,	—	362½		

²⁹⁴ Distance by the chart.

²⁹⁵ From the point of Schitwar (*ἀνκν*) to the eastern side of the Darabin.

²⁹⁶ From the eastern side of the mouth of the Darabin to the western.

²⁹⁷ Allowed from the eastern side of Kousher, but dubious.

²⁹⁸ If Brizana is Delem, this day's course is too short by ten miles, compensating for half the difference on the coast of Persis,

between Arrian and the charts.

²⁹⁹ The distance allowed is taken from the charts between the Endian and Delem, and is one reason for supposing Brizana to be at Delem; for if it is to be referred to Gunowah, it measures eleven hundred stadia,—a day's course never occurring in the gulph, or in any part of the voyage except on the coast of the Iathyophagi, in cases of extreme distress.

From this table we are first to observe, that $362\frac{1}{4}$ miles English amount to 5800 stadia within a quarter of a mile, and yet, with the allowance made from the measure given by the English charts, I am not enabled to bring the total up to the actual extent of the coast; for the mere opening of the compasses gives five degrees and an half, equal to 382 miles English, so that there is still a deficiency of twenty miles, without allowing for the course of the fleet. The total of Arrian is 4400 stadia, disagreeing, as usual, with his particulars; neither can his omissions be compensated by 160 stadia; for the omissions taken from the chart, and reduced into stadia, amount to 1560. These I have measured carefully, but precision is unattainable; and though some advantages may be taken in measuring single intervals, in order to obtain a nearer correspondence, I shall not force it upon the total, but trust to the indulgence of the reader; hoping that twenty miles upon the 382 will be deemed a minute error, in comparison of those we usually meet with in ancient geography. Strabo³⁰⁰ accords with Arrian, or at the utmost within 100 stadia; but Pliny makes the coast 550 miles, an excess which causes this single province to transcend³⁰¹ the measure of the whole gulph. I shall do a pleasure to those who have not seen d'Anville's Memoir, in producing here a specimen of that geographer's penetration. "Doubtless, (he says³⁰²,) Pliny drew from "the same source as Arrian and Strabo, for he read 4400 stadia, "and then converting these into Roman miles of eight stadia, the "divisor produced exactly 550 miles, as it stands in his text." If Pliny had calculated the omissions, and found the whole amounting

³⁰⁰ Strabo, p. 727. There is an error in the reading, but it seems to indicate four thousand four hundred or four thousand three hundred stadia.

³⁰¹ He makes the whole gulph eleven hun-

dred and twenty-five miles. According to d'Anville's method, he must have read nine thousand stadia, equal to five hundred and sixty-two miles, in reality.

³⁰² Lib. vi. c. 25.

to 5800 stadia, as I have proved they do, his produce must have been 725 miles; an enormity equal to his measure of the Indus.

In regard to the rivers of this province, I cannot pronounce any thing certain on their course inland. I trust to every traveller for the stream he passes in his route, but there are great difficulties in giving them the course found in their works, and which they must usually derive from the information of the natives. The nature of the country will naturally produce temporary torrents from every valley between the mountains; but how these are afterwards combined, and under what name they reach the sea, must be dubious, till travelling shall be more safe and frequent than it is at present. Of the Darabin and Nabon rivers we know nothing but their mouths. The Sitakus seems well arranged by d'Anville, as the stream that comes from Giauar, and collects all the torrents in the district; but the Kierazin is subject to all the difficulties which have been already stated.

The Boshavir of Thevenot is elucidated with great attention in his route, but it falls into the sea just to the north of Busheer, as d'Anville gives it. I still suspect it is joined³⁰³ by the river from Grâ, and becomes the Granis of Arrian: it is by Thevenot's account no ordinary stream. The Ab-Chirin of d'Anville, which he brings in at the Guenowa of our charts, is not, as far as I can judge, correct; it seems to be the stream of Delem, the Brizana of Arrian. Of the Arofis more hereafter. Almost all these streams Arrian calls Winter³⁰⁴ Torrents; and, so far as they all rise from the range of mountains inland, such they are: but the rains fall in this range, as far as can be collected from the variety of materials before me, in April, May, and the early part of June; there is little rain in

³⁰³ See Niebuhr's map, vol. ii. Amst. edit. another name for Busheer, the *Busheer River*.
Where, however, this junction is not verified. ³⁰⁴ *χιμαῖρος*.
I sometimes suspect that the Boshavir is only

the Kermesir, or hot country next the sea, and some years none at all. These circumstances seem to give a common characteristic to all these rivers, and to qualify them with the name of Winter Torrents, though their rise is in spring, and consequently Nearchus, who was upon the coast in February before the rise commences, speaks agreeably to the nature of the country, when he mentions some of them as too low and shallow to float even a Greek vessel in that season.

Nearchus has preserved likewise most admirably the general features of the province, which he divides³⁰⁵ into three parts; that division which lies along the side of the gulph, he says, is sandy, parched, and sterile³⁰⁶, bearing little else but palm-trees, which corresponds exactly with the Kermesir, and the accounts of all our modern travellers; but as you advance to the north or north-east, and pass the range of mountains, you find a country enjoying an excellent temperature of air and pleasant seasons, where the herbage is abundant, and the meadows well watered, where the vine flourishes, and every kind of fruit except the olive³⁰⁷. Here the kings and nobles have their parks³⁰⁸ and gardens; the streams are pure and limpid, issuing into lakes which are stored with aquatic fowls, of all the different species. The pasture is excellent for horses and domestic cattle, while the woods supply an ample variety both for the support of man and for the chase. Such is the picture³⁰⁹ set before us, and such ever was this country while it was under the

³⁰⁵ The same division is made by Strabo and Dionysius Perieg.

³⁰⁶ Strabo, p. 727.

³⁰⁷ This minute circumstance, noticed by Arrian, is mentioned also by Le Bruyn.

³⁰⁸ Sheib Bewan, rivulet Bewan, near Noubendgian, is one of the four Eastern paradises. D'Anville, p. 176.

³⁰⁹ Even in the present decline, the country is so beautiful, that Francklin, after passing the last ascent, and obtaining a view of this part of the province, bursts out into a vein of poetry, the effect of his sudden transition from the parched level of Kermesir, and the rudeness of the mountains.

protection of a regular government. The lakes alluded to are doubtless the Lake Baktegian and a smaller one near Schiraz; and the streams which terminate in these, and never find their way to the sea, are as evidently the pure and brilliant waters he describes with the same luxuriant fancy a poet of Schiraz³¹⁰ might have painted them at the happiest period of the empire. But how is this picture now reversed! War and tyranny has spread desolation all around: It is not the destruction of Persepolis³¹¹ we lament over in surveying the ruins of Chelminar, or Estakar, while we accuse either the ebriety or insolence of a conqueror; it is not the tomb of Cyrus at Pasagardæ plundered and overthrown by an avarice natural to soldiers in the hour of victory, or natives in despair; but it is the fate of a province we deplore, which once furnished the bravest troops of Asia, which abounded in every gift that agriculture and industry could produce, which rose above the barbarism of the East, and was celebrated for its poets, its philosophers, its beauteous race of women, its men, as comely in their persons, as polite³¹² and elegant in their manners; its merchants, who trafficked to the extremities of the East; and its superior culture of the vine, the only excellence which despotism has not annihilated. At the present moment, the villages have ceased, and there are no travellers in the highways. The capital is in the possession of a Kurd³¹³, a robber both by birth and profession;

³¹⁰ Schiraz is famous for the best Persian poets.

³¹¹ Arrian, p. 131, says, that Alexander burnt it in revenge for the burning of the Greek temples: but it is hardly a better cause for turning incendiary than the suggestion of a courtesan. Strabo says nothing of Thais, but accords with Arrian, p. 730.

³¹² At the present hour I cannot find that, in comparison with other Asiatics, the Persians have declined from this pre-eminence, except that they are accused of fraud and dissimula-

tion. Two vices, the natural produce of despotism, and polite manners in a state of decadence.

³¹³ Kerim Khan, in Niebuhr's time, in the year one thousand seven hundred and sixty-five. Francklin describes Kerim Khan as a benefactor to Persia, and in a better light than Niebuhr; but Francklin was at Schiraz in the year one thousand seven hundred and eighty-seven, after the death of Kerim, and the tyranny of his successors made him regretted.

and

and of the distraction consequent upon the death of Nadir Shah there seems to be no end.

There is still a third division of Persis towards the north, comprehending the mountainous country, which is wild, rugged, and inhabited by barbarous tribes, where the air is cold, and the summits covered with snow³¹⁴. The barbarians are the ancient Uxii, or modern Asciacs; and the range called Lowristan divides Persis from what the ancient historians in a large sense called Media. Isphahan, the modern capital of the empire, is just to the north of this chain, and not in Persis. These mountains extend equally on the north of Susiana³¹⁵, and send down those streams which pass through that province either into the Tigris or the Gulph of Persia; while, the more eastern part furnishes the torrents which water Persis, and all sink into lakes, or are exhausted by derivations for the purposes of agriculture. One of the largest of these streams, called Bend-Emir³¹⁶, flows near Persepolis, and corresponds with the river passed³¹⁷ by Alexander in his approach to that city, when he came from Susiana, as the fort Kalaa Sefid, taken by Timour, answers to the fortress where Alexander³¹⁸ defeated Ariobarzanes in his approach to that river. Arrian, in his third book, has unfortunately confounded Persepolis³¹⁹ with Pasagardæ³²⁰; but the former was the

³¹⁴ Κύρτιοι καὶ Μαραὶ ληστῆες. Strabo, p. 729. Ελυμαῖοι καὶ Παρατακηννοί. P. 732.

³¹⁵ Strabo has sometimes confounded Susiana with Persis, as p. 727; but he distinguishes, p. 728.

³¹⁶ The Araxes of Strabo, p. 729; but he errs strangely about the course of it. See d'Anville's Memoir.

³¹⁷ Thevenot says the same, part ii. p. 123. Tavernier, vol. i. p. 726.

³¹⁸ See Arrian, p. 130. Cheref-eddin, vol. ii. p. 189. Alexander seems to have

marched more to the north than Timour, in order to attack the Uxii, Asciacs.

³¹⁹ The archives, and a great part of the treasure, were kept at Persepolis. Strabo, p. 730; and so it appears, from Alexander's haste to reach it before the treasury should be plundered, or conveyed away. Arr. lib. iii.

³²⁰ The error is natural, for Pasagardæ is Persepolis; literally translated. The Persepolis fixed at Estakar is determined by Alexander's march.

residence of the Persian monarchs, and the latter apparently their place of burial. It is near sixty miles distant from Persepolis, in the tract called Koilé-Perfis [Perfis between the mountains] by Strabo, which ought to produce other torrents and another lake³²¹ for their reception, by the nature of the country; and such may possibly be found if we obtain a better knowledge of the interior. This town is supposed still to exist under the name of Phasa, or Phasa-gerd, which Golius interprets the city of the north-east, because it is cooled by the refreshing gales from that quarter, which is implied in Phasa.

SUSIS, or SUSIANA.

To delineate the province and rivers of Susiana is a task of no ordinary difficulty. The ancient geographers are at variance, and the moderns do not appear to have obtained a sufficient knowledge of its present state, to correct the errors, or reconcile the contradictions of their predecessors: in regard to the interior, the following discussion must labour under similar obscurity, but our knowledge of the coast has been much enlarged since the publication of Mr. d'Anville's Memoir; and if for this reason I am enabled to correct his mistakes, and to explain difficulties for which he had no clue, I shall be thought less adventurous in combating Cellarius and Salmasius, who have enveloped the question in erudition, and neglected modern authority altogether.

The fact is, however, that the ancient geographers cannot be understood or reconciled, without reference to the actual state of the

³²¹ There is something like this in d'Anville's maps, *Asie premiere partie*, &c. Strabo mentions an Agradatus, or Agradates, here, which was changed into Cyrus, p. 729. This is noted by d'Anville, and refuted.

country ; for they have applied different names to the same rivers, and the same name to different rivers; and the same writer has varied his appellations as often as he has copied different authorities. Of this I shall produce proof in regard to Arrian himself; and though I might have reduced what is necessary for elucidating the passage of Nearchus into a less compass, I trust that the length of the following discussion will be acceptable to such as think the reconciliation of classical geography an object of importance.

After the whole business was completed, I was informed by Major Rennell that he had been long engaged in disentangling the same intricacies, and treading the same ground; a cause of no small apprehension to me, if his conclusions should appear upon publication to differ from mine; of no small gratification, if they should be found to coincide. I shall at least have a generous adversary to encounter; and as I have no predilection for any system, I can, upon better information, retract as freely as I have asserted. Truth alone ought to be the object of research; and those, who are not so fortunate as to attain it, ought to subscribe³²² to those who do.

Susiana is sometimes regarded as a district of Persis, and sometimes enumerated as a distinct province. We can hardly trace a time in which it had an independent sovereign of its own, unless it be in the mythology of the Greeks³²³; and nature seems to have connected it with Persis, by a variety of local circumstances, as

³²² I subscribe to the sentiment of the modest and ingenious Niebuhr:

Il n'y a point de description de voyage sans défaut, n'y aucun voyageur exempt de tout préjugé, ainsi le parti le plus sage c'est de

ne pas défendre ses opinions avec opiniâtreté. Niebuhr, tom. 1. p. 85. Arabic edit. Amsterdam.

³²³ In their accounts, Memnon, son of Tithonus, was the founder of Susa.

much as by vicinity. It is separated on the north from Media by a range of mountains common also to Persis, of which the general appellation is Louristan; possessed in all ages by independent tribes, which were confined within their own limits, when the government was strong; and, when it was weak, returned with increased avidity to a life of rapine. So far as can be collected from the transactions of Alexander, the Uxii and Parataceni were upon the southern face of these mountains; the Kossæi and Elymaitæ³²⁴ on the north; the Uxii lie on the left, between Susa and the Arofsis; the Parataceni, on a part where the mountains have a much greater breadth, on the north of Persis. This range, where it rises on the west, approaches, but does not touch³²⁵, the Tigris. In this interval, Mr. d'Anville brings down the Gunedhi, which is the Gyndes³²⁶ of Herodotus so much humiliated by Cyrus, and which he conducts into the Tigris just above its junction with the Euphrates at Gorno. The rivers or canals of Susiana are connected with this stream, and in this sense it forms the boundary of the province on the Tigris; but as soon as the mountains rise, they run in one uninterrupted chain, covering not only Susiana and Persis, but extending much farther towards the east. This chain sends down all the numerous streams which water the fertile plains below; and there is an error common to Strabo, Al-Edrisi, and Cheref-eddin, that all these rivers join the Eulæus, and communicate, by means of that junction, with the Tigris. This opinion, however, is in one sense true; for all the

³²⁴ Elymiotæ, the *Elam* of the Scriptures. Uxii, *Asciacs*. Parataceni, *Bahtiari*. Kossæi, *Kissii*, *Coss's*.

³²⁵ Otter, coming down from Bagdat, marks them at a distance, where they first begin to show themselves between Amara and Gorno.

³²⁶ Herodotus, in his first book, brings the

Gyndes to Opis; there are supposed to be two cities of this name, but neither answers. In his fifth book, p. 397. where he gives the post-road from Sardis to Susa, and where he seems to say there are four Stathmi from Opis to Kissia, [the mountains of Susis,] it seems to agree with Gorno, or some place near it.

rivers are united inland by canals, and the policy of the government in all ages, while there was a government, appears to have paid as much attention to this object, and to agriculture, as Egypt itself. The fact admits of proof under the later dynasties, and the journal of Nearchus will furnish some evidence of its antiquity. It is not unreasonable to suppose, that this communication was extended to the Arofis also, and by that stream to Persis; and if this were true, the intercourse between Persis and Mesopotamia, by an inland course, was complete.

The A R O S I S.

THE Arofis, which is the Oroatis of Strabo, Pliny, and Ptolemy, and which Cellarius supposes to be properly the Arois, Ares³²⁷, or Araxis³²⁸, is the boundary between Persis and Susiana; its modern names are almost as numerous. T'Ab, or the river, is the title it takes by way of pre-eminence among the Persians, for it is the largest river³²⁹ of the province, a circumstance peculiarly noticed by Nearchus. It is styled Ab-Ar-goun by the historian of Timour; whether from a town of that name upon the higher part of its course, or whether by corruption from Rhegian³³⁰, sometimes written Ar-Rhegian, I cannot trace: and Endian³³¹ is the name it bears in our

³²⁷ Who shall give us the etymology of rivers? Bruce found a Skelti, and an Arvon, or Avon, in Abyssinia. Aar is a river in France, Arno in Italy. What language shall be found that shall furnish names common to Abyssinia, Media, Italy, France, England, and Scotland? I have an obscure reason for thinking that Ar, or Aar, usually denotes confluence.

³²⁸ Araxis is a name common to a variety of rivers in different provinces of the East. The Armenian Aras, which falls into the

Cyrus, and so into the Caspian Sea, is the most celebrated. This is the *pontem indignatus Araxis*.

³²⁹ ὅσοι ἐς τὸν ἕω πόντον ἰμβαλλοῦσι is the expression of Arrian, not very accurate.

³³⁰ Argoun I find as the proper name of a man. Otter, vol. i. p. 189. Ergoun, son of Ibka, fortified Kasvin: but it must be observed that the termination *ain* passes into *oun*; for Otter writes Kiesirain for Kasferoun, and thus Arrehgian may become Argoun.

³³¹ Niebuhr writes it Hindian.

modern

modern charts, from a town upon its banks, a few miles distant from the sea.

This river is formed from a variety of sources, which spring out of the mountains of Louristan; and as the chain is of greater breadth in that part of its range, the river seems to be large in proportion. Alexander and Timour, in their march from Susa to Persis, both inclined to the mountains, in order to attack the Uxii, or Asciacs, who lie in that direction; and they both passed the sources of this stream, at a considerable distance ³³² from the sea. In the march of Timour, I can discover several sources on the west of this river, which the commentator upon Cheref-eddin carries into the Eulæus ³³³, but which, I agree with d'Anville, ought to be carried into the Arofis. Alexander and Timour both proceeded across this river, to attack a fortress in the mountains, which formed the northern frontier of Persis, and which is called Calaa-sefid ³³⁴ by Cheref-eddin. This fortress corresponds with the post Ariobarzanes ³³⁵ defended against Alexander; but at the same time Alexander marched through the mountains on the north, he detached Parmenio, with the gross of the army, by the ordinary ³³⁶ road to Persis. This is the road which continues to this day, if there be any road, which Al-Edrifi describes as cutting the Arofis at Ragian, about thirty miles from its mouth, and where, he says, there is a bridge called Baccar, at a bowshot's ³³⁷ distance from the town. He gives a variety of routes

³³² Timour at Kerdistan, 70 miles from the mouth, according to d'Anville. See Cheref-eddin, vol. ii. p. 185. alluding to the dyke upon the Bend-Emir. Otter, vol. ii. 51.

³³³ Cheref-eddin calls the river of Susa, Ab-Zal; in which d'Anville says he is mistaken. ³³⁵ Le Bruyn mentions a tradition of this siege still existing among the natives.

³³⁶ κατὰ τὴν ἀμαξινὸν τὴν εἰς Πέρσας φέρουσαν. Arr. lib. iii. p. 130.

³³⁴ Calla-al-Sefid, the canal or cut of Sefid; ³³⁷ Nub. Geog. p. 126.

through

through Persis, all verging to this point; and, from the size of the stream, here probably was the first place where it would admit of a bridge.

The mountains which give birth to the Arofis do not approach the sea, nearer than the neighbourhood of Rhegian; but seem to leave a low country on the coast, corresponding with the Kermesir on the gulph. This must have always left Susiana open to the Persians, and have been the means of keeping it in dependence, as was its constant state; but on the north the range sweeps round till it unites with that chain which forms the back ground of the Kermesir, and this chain, according to d'Anville, no river passes. The sources, therefore, which Alexander and Timour found in the neighbourhood of Calaa-sefid, all contribute to form, not the Arofis, but the Bend-Emir, or *Noble River*, which passes on in the vicinity of Schiraz and Persepolis till it is lost in the lake Baghteghian, or exhausted in adorning and fertilising the beautiful country of Koilé-Persis³⁸. We have now the Arofis distinct, according to d'Anville, and I have found nothing in ancient or modern history to contradict his system; nor do I think that any future discovery will invalidate it, farther than perhaps to find a different issue for some of his minuter sources. This Arofis is the eastern boundary of Susiana, where Nearchus is now anchored; and deferring the intermediate streams for the present, I shall proceed to consider the Euphrates and the Tigris united in the Schat-el-Arab, which forms the *western limit*.

³⁸ Cœlé-Persis, like Cœlé-Syria, Persis between the mountains.

SCHAT-EL-ARAB, or MOUTH of the EUPHRATES and TIGRIS united.

THE Euphrates and the Tigris both preserve to this day, among the natives, the same appellation assigned to them by Moses³³⁹ in the book of Genesis, for he styles the one Hu-Pherát, or Pherát, and the other Hid-Dekhel³⁴⁰, two names which are still preserved in the country with no greater variation than Ph'rat and Deghel, or Dejel. These two rivers, like the Ganges and Burrhampooter, rise at no great distance from each other in Armenia; and, after separating to embrace the great tract called Mesopotamia, unite again, like those two streams, at Gorno or Khorna, about an hundred and thirty miles distant from the Gulph of Persia. D'Anville has strangely curtailed³⁴¹ this distance; for in his map of Asia he makes

³³⁹ Gen. ii. 14. Pherat is used frequently in Scripture with the pronoun, as הוּא פֶּרַת Hu-Pherát, *The Pherát*, or *that Pherát*, by way of pre-eminence; and is derived by the commentators from פָּרָה to produce fruit, on account of its fertilizing the country by canals, &c. from פָּרַח and פָּרַץ to burst or spread, because it overflows its banks, and from פָּרַד, פָּרַם, פָּרַם to divide, because it separates or bounds the desert. The Greeks, as Hoffman justly says, *more suo*, derive Euphrates from εὐφραίνω.

³⁴⁰ Hid-Dekhel is written הִדְקֶל Kid-Dekhel, and by the Samaritan MS. הִדְקֶל Hid-Dekhel, as we are informed, from הִד to dart forth, הִדְד loud, or from הִד to penetrate; with the addition of קֶל, which implies swift motion; a sense agreeable to the opinion of the Greeks, who interpret the Tigris, sometimes *swift*, and sometimes an arrow. It is remarkable that the pronoun Hu should preserve itself in the Greek Euphrates, which it certainly does, unless Hu is

from Ab, Av, Au, water or river; and that none of the authorities should suffer us to write Hi-Dekhel, so as to search for a primitive of Dekhel rather than Khalal. [See Bochart. Phaleg. 119. Dikla, urbs palmarum, Chald. Deut. xxxiv. 3. Quære annon Mesopotamia regio Palmarum? Dekhel is assuredly the Deghel of the Arabs, the Diglath of Josephus, and Diglito of Pliny; and from Degel (according to Bochart) the Greeks made Deger, Teger, and Tigris.] An idea occurred to my own mind, that as Hu expressed the male, and Hi the female, (הוּא ille, הִיא illa,) there might have been some allusion to the confluence, or the marriage of the rivers, or that Deghel was marked by the feminine pronoun, as Pherát is by the masculine; but I am forced to abandon this suggestion by authority that I ought not to dispute.

³⁴¹ From the mouth to Bassora 100 miles, to Khorna 75.

175.
Ives, p. 227.

it less than seventy miles, and in his two latter maps has extended it to something less than an hundred : but M'Cluer can hardly be mistaken in making it seventy³⁴² up to Basra only ; for he navigated this channel more than once, and has given directions for the course up to that city. Khorna signifies an horn³⁴³ in Arabic, evidently marking its connexion with the Greek, Latin, and English; and here the river divides *upwards* in that form. From Khorna, down to the division of the stream again which embraces the Delta, is the part properly called the Schat-el-Arab, or river of the Arabs. From that division downwards, the western, or direct channel, still navigated by European vessels, is called Cossifa-Bony, or Bouna, in opposition, as I conceive, to the farthest channel eastward, called Deree-Bouna³⁴⁴, from Deree, an island, at its mouth ; and in treating of this western stream, I shall be obliged, for the sake of perspicuity, to call the whole channel from Khorna to the sea by the name of Schat-el-Arab. The junction formed at Khorna was certainly known to Ptolemy, and, I am persuaded, was the grand confluence in all ages ; but Pliny and Arrian as certainly give two mouths, one to the Tigris and another to the Euphrates ; the latter, I shall hereafter shew, was the Khore-Abdillah with which d'Anville seems unacquainted ; and hence he has been led into a variety of

³⁴² He makes it ninety from point to point, that is by the windings, p. 33. Ives, p. 227, makes it 100.

³⁴³ The æra of Dil-kharnim, or Alexander, from his figure with the *horns* of Hammon, as is supposed by some, is well known in Asia ; and in this compound we find the plural of Kharna, or Khorna.

The Greeks and Latins described rivers by a bull, as some imagine from the roar of wa-

ters ; but Achelous lost an horn by Hercules, that is, as mythology informs us, had one of his sources intercepted, and other rivers are styled *Tauriformes*.

³⁴⁴ Bouna, or Bourna, I suspect to signify a *stream*. Bournabafchi is the *head of the stream*, in Chevalier's account of the Troas. Whence is the connexion with our English-Bourne ? which signifies a *stream*, or a *boundary*.

errors, which disfigure his learned Memoir upon the Mouths of these two Rivers. I shall, however, first consider the great Delta, and afterwards return to treat of these difficulties.

The Delta of Susiana is much more properly than the Delta of Egypt inclosed and divided by seven ³⁴⁵ streams ³⁴⁶, which are called, 1. The Cossifa-Bony ³⁴⁷; 2. The ³⁴⁸ Bamishere ³⁴⁹; 3. The Caroon, or Karûn; 4. The Selege; 5. The Mohilla; 6. The Gaban; and, 7. The Deree-Bouna. These are names which I obtain from a very curious anonymous chart of Mr. Dalrymple's, and are apparently the titles by which these channels are known to the Karack pilots. This chart explains the journal of Nearchus as perfectly as if it had been composed by a person on board his fleet. Three of these streams, after cutting the Delta, pass through a shoal which is called the Ali-Meidân, (the *race-ground* of Ali,) as is supposed from its level surface, extending out twelve, and in some places seventeen miles, from the coast of the Delta. The Meidân is rarely ³⁵⁰ or never dry, even at the time of ebb; but the channels which pass between it have a considerable depth of water; these are styled Khores, that is, limits or divisions of the sand; and thus Khore Gufgah is the issue of the Bamishere channel, Khore Musah of the Karûn, and Khore Wastah of the Selege. The general name of the land they

³⁴⁵ Small channels are sometimes cut for purposes of communication or agriculture; but they vary with the fluctuation of the government. These are natural channels.

³⁴⁶ Ten streams according to Pliny, lib. vi. c. 27.

³⁴⁷ Khôre Hâlte. Niebuhr.

³⁴⁸ Niebuhr writes this Bäckmeschir, which is done by adding k to the guttural in Bahmiser, the natural consequence of a deep

sound in the throat; so Hân, Khân, Cawn. Shushan, Hufan, Khufan, or Khoofan, shewing the relation between the ancient Susa and modern Khoofistan.

³⁴⁹ The Bäckmeschir of Niebuhr, as next in order to his Khore Sable ought to be the Karûn: but of this, from Mr. Jones's intelligence, I have reason to doubt.

³⁵⁰ Only dry in part, that is where the water is less than two fathoms. Mr. Jones.

separate on the Delta is called Gaban, of which I am not able to give the limits; but the tract between the Cossifa-Bony and the Bahmishere³⁵¹ is particularly called Meuan and Muçan³⁵², corresponding with the Mesene of Xiphilinus, and Khore Musah, with Ptolemy's river Mosæus³⁵³, which none of the modern geographers know where to place. At the head of this Mesene, near the Haffar Cut, was placed the Spasini Charax, or fort of Spasinus. Mr. Dalrymple's anonymous chart has a fort there at present called Old Haffar Fort, with another on the opposite shore; both existing when Thevenot went by this course up to Basra, and both intended by Spasinus³⁵⁴, and all his successors in power, either to guard the channel or to exact a tribute. I mention this place for two reasons; first, because Alexander is said to be the original occupier of this site; and, secondly, because Cellarius is at a loss, and d'Anville is

³⁵¹ I suspect, but have no means to prove it, that Bahh-Mishere is related to Bahh-Mesene, which extended perhaps to the Karun.

³⁵² See M'Cluer, p. 30. with Dalrymple's query, Mucan or Musan? and see p. 32. note. Marcian writes *Mayâis* for Ptolemy's *Mosæus*, see p. 17.; so that the difference between Mucan and Musan is ancient as well as modern. Salmassius reads *Mosæus*.

³⁵³ See Cellarius in Susiana, and d'Anville's Dissertation. To make Khore Musah exactly correspond with the Mosæus of Ptolemy, it must be the issue of the Karûn, as it is in M'Cluer's chart. The Orientals write Moufa, pronounced Moofa, for Moses; the Greeks wrote *Μωυσης*, Mooufes, and in this form we easily find the Mosæus of Ptolemy. Musah, or Musa, is pronounced, as we should utter Moofa, and not Musa, or Muse. An Arab would doubtless attribute Moofa to Mo-

ses, and the name of the prophet was sufficiently current in the East to fix his title here, even previous to the age of Ptolemy; but it is a name common to many places, as well as one specified by Niebuhr in Yemen. It will be proved hereafter, that Ptolemy reckoned the Dorack channel as the mouth of the Eulæus; and then as he mentions but three [the Tigris, Mosæus, and Eulæus]. The Mosæus would regularly be the Karûn, and so answer individually to Khore Moofa; a proof of this is, that his Oroatis, or Arofis, succeeds next to his Eulæus.

³⁵⁴ Pasinus, Pasines, &c. &c. It is the name of an Arab before the time of Pliny, like a Sheik Soleiman of the present day.

It is not necessary to fix on this identical spot for the fort; by Pliny's account it ought to be nearer the sea.

not without his doubts; but before I enter into this question, I must digest the course and order of the channels. The Schat-el-Arab would naturally have but two, which are the two western ones, the Cossifa-Bony and the Bamishere. The Bamishere was a channel frequently navigated by the country vessels till within these few years; when it was obstructed by an Arab Sheik, with a view of drowning the country on the Cossifa-Bony; but operated contrary to his expectation, in clearing that channel, and removing the sands at its mouth. This transaction took place while Mr. Jones was resident at Basra, and is recorded by Niebuhr as happening to the Khore Sable³⁵⁵, which is perhaps his name for the Bamishere.

The five western channels seem to derive their origin from the Eulæus, or river of Sufa; this stream divides in the interior of the province; at what point is difficult to determine: but I can discover clearly, that on approaching the Delta the western branch takes its title from Karûn, a town ten or twelve miles above the Delta, as the eastern channel does from Deurak, Dorak, or Deree, another inland town, that extends the influence of its name down to the coast. The western branch, upon its approach to the Delta, subdivides into four; the first carries its name of Karûn through the Delta to the sea. This was the channel navigated by the country vessels in Thevenot's time, from Bender-Regh to Basra; and the three others are the Selege, the Mohilla, and the Gaban. The Dorack stream of the Eulæus, after separating inland, comes to the east, and, as it touches the Delta, joins on one side with the Gaban river, and with another arm, which we may call a sixth channel,

³⁵⁵ Sable seems an European term, and French.

encircles an island named Deree, from this Deree, or Dorack stream; and there is a tract within land styled Dorac-Stan, or Dorghestan, from the same origin. Now it is remarkable that Ptolemy notices a Dera inland, which Cellarius knows not how to fix; wherever it is, it gives a title to this river, as Karûn does to the western branch; it communicates its name also to Deree, the island, where we are to look for the Kata-Derbis of Arrian, which d'Anville has mistaken; and in Dorghestan I find the Margaftan of Arrian, which he calls an island at Kata-Derbis. The Dorack river is no very considerable stream, and according to Mr. Dalrymple's chart, dry at low water; it was probably of more importance formerly, either by natural or artificial means, when the navigation of the province was the object of government. Between the mouth of this channel and the Khore Wastah there is a shoal, corresponding with the Ali-Meidan, called Carabah, or broken ³³⁶ ground, because the soundings vary in an instant. The native pilots say, there is a town sunk under water here, and that the lead is sometimes dropt upon the tops of houses, and sometimes into the streets, which makes the difference so immediate. This is a circumstance connected with the passage of Nearchus, either through or over this shoal, as will be noticed in its proper place. And again to the eastward of the Dorack, there is another shoal named Barcan ³³⁷, extending to the mouth of the Arofis. The extent of all these shoals naturally obliges vessels to be careful how they approach the coast, and the ground of the Delta being proportionably low and level, is rarely visible except by the rushes which grow upon it. When Thevenot went up the Karûn, he compares the country to Holland;

³³⁶ Mr. Jones.

³³⁷ The Sinus Arenosus of Ptolemy, or that part of it nearest Deree.

and a Holland it would be, with industry and a good government; for a soil, which is the accumulation of slime, ought naturally to be fertile. In his time, there were only a few mean villages dispersed here and there, with a small quantity of cattle and some plantations of the date tree, which is the staple of the country. Within these few years, it was possessed by the Arab tribe of Kaab³⁵⁸, under a Sheik called Soleiman; he seems to have bettered the cultivation, and, by the possession of a piratical fleet, to have rendered himself formidable to the Turkish government of Basra on the one hand, and to the Vakeel of Schiraz on the other³⁵⁹. He was afterwards involved in a quarrel with the English, on account of two considerable vessels which he had taken, but at last fell by the hands of his own people³⁶⁰. Such is the nature, and such are the inhabitants of the Delta, and such are the branches of the Tigris and the Eulæus which form it. There may have been a time when these two rivers flowed into the sea without farther connexion than their vicinity; but there is now a canal which joins them, called the Haffar, which comes out of the Schat-el-Arab, about eight-and-twenty miles below Basra, and runs eastward till it touches the Eulæus, or Karûn, just at the point where it approaches the Delta. This canal is older than the time of Alexander, for Nearchus mentions that part of the fleet passed through it into the Tigris, when Alexander came down the Eulæus to the sea. I shall treat more of this hereafter; but I must remark at present, that inland navigation is the characteristic of the province; and that neither Cellarius or d'Anville have sufficiently attended to this object. Cellarius, who allows that the Mosæus of Ptolemy must be

³⁵⁸ Kiaab of Otter, and Kiab.³⁵⁹ Niebuhr.³⁶⁰ Mr. Jones.

between

between the Tigris and Eulæus³⁶¹, cannot comprehend how this canal of Haffar could pass between these two rivers, without exhausting itself into the Mosæus; but he might now see, by a glance at Mr. Dalrymple's chart, that we have³⁶² a Tigris³⁶³ and Eulæus³⁶⁴, with the Mosæus³⁶⁵ between them, and the Haffar canal passing at the head of the Delta from the Tigris to the Eulæus.

Mr. d'Anville³⁶⁶ has been led into a greater error; for he places the Mesene west of the Schat-el-Arab, instead of east. And what induced him to adopt this system is by no means apparent, as he knew well that the ancient geographers place the fort of Spasinus in Mesene, and he has himself placed this fort eastward of the Schat-el-Arab, though he places Mesene on the west. Upon considering this opinion, I am induced to think that Mr. d'Anville is misled by Ptolemy's Sinus Mesanius; and if that can be accounted for, the whole coast may be adjusted, and all the ancient geographers made consistent with each other.

D'Anville's Mesene is the Gezirat Khader of Thevenot, the Dauasir of Niebuhr, lying between the Schat-el-Arab and the Khore Abdillah; but Ptolemy's Sinus Mesanius is certainly not the coast of this tract; for his two mouths of the Tigris are mani-

³⁶¹ Et quia Mosæus intervenit Tigrim et Eulæum, ostium quoque ejus, si in mari est, ut tradit Ptolemæus, propius utique ad Tigrim accedit, quam Eulæi. Quod vero fossa illa ex Tigri in Eulæum haud longè supra ostia, uti ex Arriani verbis apparet, ducta fuit, dubites quæ fossa per aliud flumen, Mosæum puta, transversa duci potuerit, ut non efflueret per flumen illud: nisi supra fossam Mosæus vel

Tigri vel Eulæo se adfuderit. Cellar. lib. iii. c. 19. Susiana, p. 483.

³⁶² Ptolemy notices only three of these mouths, which correspond.

³⁶³ Cossisa-Bony.

³⁶⁴ Dorack is the Eulæus of Ptolemy.

³⁶⁵ Karûn.

³⁶⁶ Memoir, p. 180.

festly the Schat-el-Arab and the Khore Abdillah, as appears by his placing Terédon between them; and his Sinus Mefanius as manifestly commences not between them, but at the mouth of the Khore, and extends down the western side of the gulph. On looking down the gulph in this direction, I find the bay of Grane³⁶⁷, with three islands at the entrance; one of these nearest the shore is called Muchan; this, I apprehend, gives name to the Sinus Mefanius; and when I look into Ptolemy for the termination of this on the north, I find the longitude assigned to it is 79°, specifically the same as his western mouth of the Tigris, that is, the Khore Abdillah.

Thus Mercator interprets the text, and thus the longitudes and latitudes appear in Ptolemy:

		Long.		Lat.
p. 144. Sinus Mefanius,	-	{ 79° 0' —		30° 10'
p. 154. Sinus Mefanites,	-	{ 79° 0' —		30° 10'
p. 149. Ostium Tigris Occidentale,		79° 0' —		30° 34'
p. 145. Teredon,	- -	80° 0' —		31° 10'
p. 149. Ostium Tigris Orientale,		80° 30' —		31° 0'
p. 149. Vallum Pafini,	-	81° 0' —		31° 0'
p. 149. Mosæus,	- -	82° 0' —		30° 40'

The error of these longitudes is foreign to the inquiry; but their relation and congruity prove that the termination of the Sinus Mefanius is at the western mouth of the Tigris; that Terédon is between the western and eastern mouth, consequently that the Khore Abdillah is Ptolemy's western, the Schat-el-Arab his

³⁶⁷ There is a Graan noticed by Ptolemy, of Susiana; it can have no relation to this but in long. 82. which brings it to the middle Grane. See p. 157.

eastern

eastern Tigris; and that the fort of Pafinus is between the Schat-el-Arab and Mosæus or Karûn.

This bay, consequently, cannot be on the coast of d'Anville's Mesene, for it is south-west of the Khore instead of north-east; and if we could obtain the interpretation of Muçan³⁶⁸, we should probably find the reason why it is attributed both to this island at the bay of Grane, and to that tract which is inclosed between the Schat-el-Arab and the Karûn, which is the Mosæus of Ptolemy, and which gives name to the Mesene of Xiphilinus, Josephus, and other historians.

With the Khore Abdillah d'Anville was not properly acquainted; he supposes it the ancient mouth of the Euphrates; and such it is according to Pliny and Arrian, but no ancient author of estimation except Ptolemy ever made it a mouth of the Tigris. This is the first source of his mistake, and he now makes this a mouth of the Tigris, which in another part he labours to prove the Euphrates. The Mesene³⁶⁹ of Pliny is so confused, that I should be thankful for a construction of the passage. Mr. d'Anville says, he carries it above Seleucia; if so, it is another region with which we have no

³⁶⁸ Une bande de terre, isolée par un canal. D'Anv. Geog. Anc. tom. ii. p. 201. If this be true, it accounts for both, and for the Mesene of Pliny.

³⁶⁹ Tigris . . . lustratis montibus Gordyæorum circa Apamiam Mesenes oppidum, citra Seleuciam, Babyloniam, cxxv. M. pass. divisus in alveos duos, altero Meridiem ac Seleuciam petit, Mesenem perfundens: altero ad Septentrionem flexus ejusdem gentis tergo Cauchas secat. Ubi remeavere aquæ Pafitigris appellatur. Postea recipit ex Media Choaspem.

In the course of four lines here is a desultory step from the Curd mountains to the mouth; but d'Anville, by the help of Apamia, finds out this Mesene. See Geog. Anc. tom. ii. p. 200. Cellarius, vol. ii. p. 462. See Ammian. Marcel. lib. xxiv. p. 399; where Mesene evidently means a tract between the two rivers: but this Mesene is above Babylon, unless, by joining it with Mare Magnum, we should prefer the lower. By *ubi remeavere aquæ*, he seems to mean as high as the tide flows, in which he is not correct, for the tide flows above Khorna.

concern. But let us consider next the Mesene of Xiphilinus. These are his words: "After Trajan³⁷⁰ had taken Ctesiphon, he determined to navigate³⁷¹ the Red Sea, that is, the Gulph of Persia. " There is an island there formed by the Tigris, called Mesfana, under the government of Athambilus; this Trajan reduced without difficulty, but was himself brought into great hazard from the season of the year, the violence of the stream, and the inundation of the tide. The inhabitants of the fortress of Tospasinus relieved him, however, by their friendly reception of him into the place. This fortress is under³⁷² the government of Athambilus." D'Anville places the fort of Spasinus where I do, but the district of Mesene on the other³⁷³ side of the Schat-el-Arab. This passage proves that the fort is in Mesene, and the Mesene between the mouths of the Tigris; that is, between the Tigris and the Mosæus. It is possible I may be mistaken in assigning a position to the fort. But there is no error in replacing the Mesene³⁷⁴ east of

³⁷⁰ Postquam Ctesiphontem cepit [Trajanus] statuit mare rubrum trajicere appellant Mesianam quoque insulam Tigris in qua Athambilus regnabat, nullo labore cepit atque iis in locis propter vim hyemis et rapidum Tigrum æstumque maris in magnum periculum venit. Qui vallum Tospasi habitabant (nam ita ab incolis appellabatur eratque in ditione Athambili) Trajanum amice receperunt. Xiphilin. Traj. p. 55. Ed. Basil.

Tospasi is, I conclude, a corruption from the Greek το Σπασίνω χωμα; for, we learn, that the fort was erected upon a mound of raised earth, to give it security both from an enemy and inundation; for the whole of the Delta is a level. See Cellarius, vol. ii. 448; who reads το Τοσπασίνω contrary to my supposition.

³⁷¹ Trajicere.

³⁷² Rather in the territory of Athambilus, in ditione.

³⁷³ See the map to his Memoir, and that of the Tigris and Euphrates.

³⁷⁴ See Josephus, lib. i. Antiq. c. 7. Stephan. Σπασίνω χώρας πόλις ἐν τῇ μέσῃ τῆ Τίγρητος Μεσσηνί, &c. all adduced by Cellarius, vol. ii. 488. but he is not contented to be right. He adds, Aberrat autem in eo quod in mediâ Mesenâ illâ, quam Tigridis ostia constituunt, posuit.

I build much upon the modern name of Muçan, and the Khor Moofa, and perhaps it ought always to have been written Mosena, or Moosena, from Muçan, which the Greeks made Mesene, because they had a Messene of their own. It is their practice in a thousand instances. I have, however, found reason to suppose that Mesen signifies an island, or perhaps more properly land surrounded by the arms of a river. See note 368.

the Schat-el-Arab instead of west. The just estimation of Mr. d'Anville's name has led me into this discussion. I have now done with the Delta of the Tigris, and proceed to the Euphrates.

KHORE ABDILLAH, supposed MOUTH of the EUPHRATES.

THE Euphrates appears always to have formed its principal junction with the Tigris at Gorno, or Khorna; but as, from the most early ages, it sent off canals on both sides, for the purposes of agriculture or communication, so it has happened that one of these which passed by Old Basra, and fell into the Khore Abdillah, has been mistaken by Pliny and Arrian for the real mouth. Arrian is so persuaded of this, that when Nearchus anchors at Diridotis, or Terédon, in the Khore Abdillah, he calls it anchoring in the Euphrates: and he says in another part of his work, that this mouth, or khore, is almost choked in consequence of the derivations which drain the stream above. The Khore Abdillah, upon the English charts, appears larger than any khore of the Tigris; and this circumstance, with which d'Anville was unacquainted, would have confirmed him, if he had known it, in his system, that it is the original mouth of the Euphrates. It is remarkable that Ptolemy gives no mouth to the Euphrates; his western issue of the Tigris, that is, the Schat-el-Arab, is in ³⁷⁵latitude $30^{\circ} 34'$, and his junction of the Euphrates with the Tigris is in latitude $34^{\circ} 20'$, making a difference of $3^{\circ} 46'$; evidently much too large; but as evidently pointing out the confluence ³⁷⁶inland, as Khorna does at this day. Strabo doubtless thought the Khore Abdillah to be the mouth of the Euphrates, by placing Terédon ³⁷⁷on its bank; but Solinus ³⁷⁸asserts, that the

³⁷⁵ P. 149.

³⁷⁶ So Mercator understands it, as appears by his distorted map.

³⁷⁷ P. 80.

³⁷⁸ P. 66. Sol. Tigris Euphratem desert in finum Persicum.

Tigris carries the Euphrates into the Persian Gulph, and Pliny, who joins it to the Pasitigris, (by which he means the Schat-el-Arab,) evidently alludes to the original mouth at the Khore Abdillah, which the Orchoeni ³⁷⁹ had obstructed; and so long had it been obstructed in his time, that he no longer places Teredon on the Euphrates, but says it lies below the confluence of the two rivers ³⁸⁰.

Let us now advert to the Khore Abdillah itself, which will afford a clue to unravel all these difficulties. The ancient kings of Assyria, Chaldea, and Babylon understood the value of inland canals, as well as the Egyptians, Indians, Chinese, or the modern commercial states of Europe. In Egypt, and on the side of the Euphrates, all that was gained out of the desert was just so much added to the empire; and thus, as we find a cut parallel to the Nile for near four hundred miles, so Niebuhr is of opinion, that there was a canal running westward of the Euphrates from Het ³⁸¹ more than six days' journey above Babylon ³⁸², till it fell into the sea at the Khore Abdillah. This is an extent of more than five hundred miles; and, however great, is not superior to the magnificent designs of the age ³⁸³ to which it is attributed. It is countenanced, likewise, by

³⁷⁹ Lib. vi. c. 27. Euphratem præclusere Orchoeni, nec nisi Pasitigri defertur in mare.

³⁸⁰ C. 28.

³⁸¹ Het is on the wind of the river, near Kunaxa, where the ten thousand fought Artaxerxes, according to d'Anville.

³⁸² The language of Al-Edrisi is very strong in confirmation of this opinion. After bringing down the Euphrates to Het and Enbar, he adds,

Reliqua vero pars Euphratis fluens e Rahaba a tergo deserti in varia dividitur brachia quorum unum perget ad Tisrifar aliud ad Alcatfir [al Khader], aliud etiam ad Sura quantum

denique ad Kufam [juxta Pallacopam], et omnia ista brachia varios in lacus sese immergunt, p. 197.

If we can interpret this as a canal commencing at Rahaba, that place is not far from Thapsacus, two hundred and fifty miles higher up than Niebuhr carries his canal.

³⁸³ That age of the Anakim, or Giants, as Bryant styles them, produced the Pyramids, the Lake Mæris, the Obelisks, the walls of Thebes, Babylon, Tiryns, and Orchomenus, with other monuments of magnificence in various parts of the world. Were these the effect of numbers or mechanic powers?

the accounts we have in Herodotus and Diodorus, of the reservoirs formed above Babylon, to withdraw or feed the stream at pleasure; by the existence of the two lakes below Babylon, near Mesched Houssein and Mesched Ali³⁸⁴, the Pallacopas of Arrian; and by a variety of cuts, some of which remain to this day, and still fertilize the desert; the remains of towns³⁸⁵ also noticed by almost every traveller in the caravans between Basra and Aleppo, all contribute to the probability of the fact. They flourished while the canals flowed, they have perished by the devastation of the Arabs, and the neglect or inability of the government to maintain the supply of waters. If such a canal as this existed, it communicated with the parent stream at various points; and such a communication as this, d'Anville has pointed out at Nahar Saleh, about five-and-thirty miles above Khorna; he brings this down parallel to the Schat-el-Arab, gives it another communication³⁸⁶ with that channel, near Basra, and afterwards conducts it into the Persian Gulph, in the direction of the Khore Abdillah; this is the stream he concludes to be the ancient course of the Euphrates, and such it was in the estimation of Pliny, Strabo, and Arrian. D'Anville, with the assistance of Texeira, finds this channel now dry, and styles it the Choabedeh³⁸⁷, which I suspect to be only a corruption of Khore Abdillah, and this dry channel certainly exists, for Mr. Jones, when resident at Basra, has ridden along it many miles.

Khore Abdillah takes its modern title from a name of no little importance in Mahometan mythology, for Abdillah is the son of

³⁸⁴ Bahr-nedsjef is the name of this lake. Niebuhr, vol. ii. 184. Amst. edit.

³⁸⁵ See Niebuhr, *ibid.* El Khader, ten or twelve leagues from Mesched Ali.

³⁸⁶ By means of a cut called Oboleh, or

Obolla, sufficiently noticed in Oriental geography.

³⁸⁷ Which he derives from Bedeh, a tent of the Bedouins.

Annas³⁸⁸, who was porter to the prophet himself; his tomb is in the neighbourhood of Zobeir, and this Khore is a Criffæan Gulph³⁸⁹ for such votaries as come to pay their devotions to his relicks. At Zobeir, or Ghibel³⁹⁰ Senâm, in its neighbourhood, d'Anville places Orchoe, because Pliny says, the Orchoeni diverted the stream of the Euphrates; but Pliny only adds their name to the same circumstance mentioned by Arrian, in the neighbourhood of Pallacopas, or Bahr-Nedsjef, and every ancient testimony whatsoever, except Ptolemy, places Orchoe in the same situation³⁹¹. Ptolemy says, it is near the gulph; but this assertion seems so indefinite to Mercator, that he has carried it up to the lakes; and there, the latitude³⁹² assigned to it authorises him to place it: but d'Anville is not content with bringing Orchoe here, unless he annihilates Old Basra. Basra³⁹³, Bozra, and Bosara, is a name applicable to any town in the desert, it signifies rough or stony ground; and thus we have a Bosara in Ptolemy near Maskat, and a Bozra familiar in Scripture, denoting an Arabian town in the neighbourhood of Judea, taken by the Maccabees. Such a Basra, Niebuhr not only supposes in the site of Zobeir, ten or twelve miles west of the present Basra, but confirms it by the common belief and tradition of the country; he adds, what amounts

³⁸⁸ Niebuhr, vol. ii. p. 182.

³⁸⁹ It brings them within fifteen miles.

³⁹⁰ Niebuhr writes Dsjabbel, which signifies a mountain. Thus Ætna still preserves its Saracen name Ghibello. It is, therefore, a solecism in reality to say Monte Ghibello, but this solecism pervades all countries; the unknown language gives a name, which signifies mountain, and the language in use adds another mountain to it.

³⁹¹ See Salmasius, p. 703. Cellarius,

Hondius, &c. &c.

³⁹² 32° 40', p. 145.

³⁹³ Gol. ad Alfrag. p. 120. *Terra crassa et lapidosa*. But see בוצרת, under בצר. Botfrath desertum a Batzar claudit, quia clauduntur aquæ.

Bozra is mentioned as early as the age of Abraham. Gen. xxxvi. 33. Is. lxiii. 1. &c. &c. From hence Bazar for an emporium, and urbs munita, quia circumclauditur; to which the Bursa of Carthage is allied.

to proof, that Hassan, Zobeir³⁹⁴, and Tella, are buried here, and their tombs visited, who are all mentioned in Oriental writers as interred at *Bafra*. Zobeir gives his name to the present town³⁹⁵, and his tomb is still frequented. This, then, is the ancient city by which the channel passed, which is still called Dsjarri Zâade, and Hassé Zâade, by the natives; and this is the channel which, entering the head of the Khore Abdillah, was the mouth of the Euphrates, in the opinion of Strabo, Arrian, and Pliny. Where it left the Euphrates above, whether at Nahar Saleh, as d'Anville supposes, or whether it was a continuation of the grand canal Niebuhr describes, is a problem still to be resolved. I am myself persuaded that it was a canal, and not the natural course of the river; for though Nahar³⁹⁶ does signify a river, its sense in this country is usually restrained to works of art; thus the great canal is distinguished, which joined the Euphrates and Tigris in Mesopotamia, called Nah'r Malcha, the Royal Canal; and a great number of others which branch out of the Euphrates on both sides. To what degree this stream was choked in the age of Pliny or Arrian, is not easy to ascertain; it might only have ceased to be navigable; for that it continued to convey water to Old Bafra, as late as the beginning of the Mahometan æra, is evident; as that place was still inhabited, and still a city. When the supply failed, the desert was no longer habitable, and another Bafra rose on the banks of the Schat-el-Arab, the foundation of this new city is attributed to

³⁹⁴ Niebuhr, vol. ii. p. 181.

³⁹⁵ Tavernier confounds Zobeir, or Old Bafra, with Teredon, and mentions a canal to it in his time, which is either the Oboleh of d'Anville, or the canal of New Bafra con-

tinued. The same canal is mentioned by Texeira.

³⁹⁶ I say *usually* restrained; because Nahar is applied to the Euphrates itself, in Joshua, i. 4. and Gen. xv. 18.

Omar, the second khalif in the fourteenth year of the Mahometan æra ³⁹⁷.

From the respect due to Mr. d'Anville, this subject has been treated at large, but the real object is to illustrate the Khore Abdillah, which is intimately connected with the course of Nearchus, and the two lakes above, which concern the voyage of Alexander on the Euphrates, down to Pallacopas; and I must now request the reader to take a view of that tongue of land between the Khore Abdillah, and the Schat-el-Arab, called the Daûasir, the lower part of which I must sink under water, to find the lake Nearchus failed through in his return to the Pasitigris.

Nearchus, according to the journal, anchored at Diridotis in the mouth of the Euphrates, the Teredon ³⁹⁸ of other authors; that is, at the entrance of the Khore Abdillah, which they consider as the Euphrates. From hence he returned back, across a lake into the Pasitigris, to a town called Aginis. The length of this lake is thirty-seven miles, according to d'Anville; but this will be considered hereafter. I now observe that the Daûasir must be curtailed, or at least carried back so far as to give the waters the appearance of a lake rather than a river; and for this defalcation we shall find abundant evidence in the account of later writers. These proofs I reserve till Nearchus arrives at the spot; but I must now examine the Tigris and the streams of Sufiana inland.

³⁹⁷ Gol. ad Alf. p. 120.

³⁹⁸ Ευφράτης

Ἀπὸ τῆς ἡλίου μέσην Βαβυλῶνα περὶ σάς

Περσίδος εἰς αὐτὸς ὕδμα θοὴν ἀπερεύγεται ἄχνην

Υγασίης προχοῇσι Τερηδόνας ἰγγύς ὀδεύων.

Dionys. Per. 980.

The TIGRIS and PASITIGRIS Inland.

THE name given to the Tigris by Oriental authors is Degela³⁹⁹, which Bochart⁴⁰⁰ informs us they would write almost indifferently Degel, or Deger; and from hence sprung the Greek Teger, or Tigris⁴⁰¹, by their usual assimilation of sound to sense. Al-Edrisi does not change this title upon the junction of the two rivers at Khorna, but makes it prevail quite to the issue of the Schat-el-Arab into the Persian Gulph. The breadth of this river at Basra is near a mile, according to Niebuhr⁴⁰², but M'Cluer's chart makes it almost double that breadth, and, in some parts of its descent, still more. It is extremely rapid⁴⁰³ in its course, particularly when the waters come down swelling from Armenia; and the tide, which rises about nine feet, prevails⁴⁰⁴ considerably above Khorna. The junction of this river, by means of the Haffar canal, with the Eulæus, I have noticed, and d'Anville supposes the Aphle of Pliny to be a correspondent title, which is highly dubious; for Pliny finds the Chaldean lake higher up, and contracts the stream again into a channel before it reaches the sea; consequently, if his Aphle is Haffar, it must be at the lower end of the lake instead of the upper; but if we are not instructed by his position, we may be by his usage of a name; and that obligation we owe him also for preserving

³⁹⁹ Didsjile. Niebuhr.

⁴⁰⁰ And, from him, Cellarius.

⁴⁰¹ They knew that Tigris, or its root, signified an arrow; but as they had got a Lycus, or *wolf*, higher up, they were some of them not displeased to find a *Tiger* in this stream.

⁴⁰² Capper states it at a mile and a quarter.

⁴⁰³ Pietro della Vallé does not esteem it so rapid as the Euphrates.

⁴⁰⁴ According to Niebuhr, much higher in the Euphrates than the Tigris, which seems extraordinary, as the Euphrates ought to have the higher level, for all the irrigations are derived from the Euphrates, and none from the Tigris, by Arrian's account.

Diglito as an appellation of the Tigris. This canal of the Haffar, Arrian asserts, is artificial, and such the natives esteem it at this day, as appears by its title Kallá-el-Haffâr⁴⁰⁵, *the Haffar cut*. At the point where this cut leaves the Schat-el-Arab, about eight-and-twenty miles below Basra, d'Anville makes Nearchus enter the Pasitigris, but Arrian knows nothing of a Pasitigris equivalent to the Schat-el-Arab, which is the Pasitigris of Pliny⁴⁰⁶. Strabo mentions that some had applied this term in the same way as Pliny, to the union of *all* the streams, but he does not countenance this opinion himself⁴⁰⁷. This is a source of great error, and arose from the Greeks assimilating all sounds to their own language, and thinking to find a Persian term explained by an etymology of their own, in which they interpreted it *all*: but Pasi-Tigris is compounded like Pasa-Gardæ, and Pasa, Phasa, Phesa, or Besa⁴⁰⁸, as Golius informs us, signifies north-east. If this is a derivation we may rely on, Pasi-Tigris is the north-eastern Tigris, the channel or source from that quarter. Such it is in respect to the Schat-el-Arab, as will appear hereafter; but Arrian's Pasitigris is the Karûn, while the Pasi-tigris of other authors is the Schat-el-Arab⁴⁰⁹. This variation has led Salmasius into a mistake, unworthy of his erudition; for he finds a Pasitigris inland, in the neighbourhood of Susa, and not knowing how to account for it, attributes this title to the Arofis, and gives two rivers of the same name, as boundaries of Susiana, though it has but one, and that no boundary, but central. Celarius⁴¹⁰ certainly saw a difficulty in acceding to this opinion, and

⁴⁰⁵ Herodotus, lib. vi. p. 447. mentions Ampe as the place where the Tigris falls into the gulph. Whether this has any relation to Aphle, Abadan, or Haffar, may well be doubted.

⁴⁰⁶ Euphrates non nisi Pasitigri defertur in mare. Lib. vi.

⁴⁰⁷ Strabo, p. 718.

⁴⁰⁸ B and V in Persic are equivalent.

Besa dicitur quod nomen aliàs, hisce Boream notat, ventum ibidem gratissimum. Gol. ad Alfrag. p. 114.

⁴⁰⁹ See Indic. Hist. p. 357. Lib. vii. p. 282.

⁴¹⁰ See vol. ii. p. 484.

yet has not ventured to depart from it. D'Anville⁴¹¹ has sanctified this error by his suffrage.

An attentive review of the passages which give rise to this opinion will reconcile all the historians to one another, and to truth. Let us first consider the Eulæus in its source. Geographers are generally agreed that the Choaspes and Eulæus are the same. It is probable they are; but it is probable also they are from two sources⁴¹², united either at or above Susa, which pass close to the city in one stream, on its western side. Daniel⁴¹³ mentions his being at the *gate* of Shushan on the Uhlai, or Eulæus, where the expression is Oubal⁴¹⁴ Ulai, which the LXX and Jerom translate, at *the gate of Ulai*; but the letters are Aubal Aulai, and Aub-al-Aulai is the *Aub*⁴¹⁵, or river, of Aulai, Eulai-us. I produce this as a testimony that the Eulæus was close to Susa, but the Pasitigris was at some distance to the east. On this Eulæus, Alexander embarked in his descent to the sea; on this river west, Timour encamped in his march from Dez-foul⁴¹⁶, in view of the city; and

⁴¹¹ Oroatis. Quint-Curce décrit ce fleuve sous le nom de Pasitigris. Mem. p. 166.

⁴¹² Otter brings the Eulæus from Kiouhi-Zerd, Khoo-Zerd, the green mountain. It is the same which, I apprehend, Al-Edrisi calls Adervan: and as he says this mountain, or this part of the range, is thirty miles north of Susa, here is consequently a length of course sufficient to render this river navigable. Otter, vol. ii. p. 54.

⁴¹³ Cap. viii. 2.

⁴¹⁴ עַל-אוּבַל אוּלַי.

⁴¹⁵ So, in India, Gen-Aub is one method of writing Chen-ab.

⁴¹⁶ Dez-Phoul, the bridge of Dez, or Dedsj, I conclude, was erected on the stream that Otter calls the river of Dechet-abad

[the city of Dechet, or Dedsj]. This bridge, he says, was built to raise the water a mile high! in order to furnish Tufter. This account is too Oriental; but it proves at least the connexion of the stream at Dez with the stream at Tostar, and confirms the opinion, that one is the Eulæus and the other Choaspes, uniting at Tostar. The bridge at Haviza was, in the same manner, both bridge and dyke. Otter, vol. ii. p. 50. But Otter evidently does not understand his authorities. He makes Ehv-az and Haviza two distinct places; and this bridge he carries both over the river Dechet-abad and Abi-defek, see p. 50. and p. 54. Now Dechet-abad is the city of Déchet, and Abi-defek is the river of Defek; and Defek and Dechet are both Dez, or Dedsj.

and if I interpret my author right, this river is the Ab-zal, which, according to d'Anville, takes its course west, and falls into the Tigris, just below Khorna⁴¹⁷; but with Cheref-eddin it is constantly the river of Sufa⁴¹⁸; and on his authority there is reason to conclude that this is one source of the Eulæus, and comes into that river close to Sufa, conferring its name at the same time it contributes its waters; and that the river it joins, is, in its source, the Kho-aspes. Kho-aspes, according to Mr. d'Anville, signifies the *Mountain of the Horse*; which name the river takes from passing under a mountain so called; but I interpret Kho-aspes by Kho-ab, the mountain stream; and I find the river on which Timour encamped in view of the city is called⁴¹⁹ Tchar-Danké; Danké, as being common to several other streams, seems an adjunct

Dez-Phoul* is a celebrated bridge, twenty miles or more west of Sufa, constructed on the Ab-Zal by Sapor Zulestaf, who is to the Persians the same as Solomon† to the Jews, the author of all their great works; it is built on twenty-eight ‡ arches, each accompanied § with a smaller.

⁴¹⁷ See *infra*. By communication with the Gyndes above Khorna, by another cut below it.

⁴¹⁸ By a reference to Otter, vol. ii. p. 54. it will be equally dubious; but there is still proof, that the communication is open one way to the gulph, and the other to the Schat-el-Arab.

⁴¹⁹ I have met with another sense of Tchar in Ludolfus or Bruce, but cannot now recover it. Is it not the Hebrew תַּרְסָא, *Tsar*, a rock?

* Phoul, or Poule, is a bridge constantly in the writings of Le Bruyn and Thevenot.

† Sapor Zulestaf is the Sapor of the native Persian dynasty restored by Ardeshir, or Artaxerxes, anno 228; which dynasty continued above 400 years, and which the Persians reverence more than any other, as re-establishing their power after the usurpation of Alexander, the Seleucidæ and the Parthian race. It is much to be questioned if they have any authentic annals prior to this family. Ardeshir, Kobad, Sapor, Darab, occur in this list, who give name to the four districts of Persia, and Hormisdas

to a fifth in Karmania. Only it is to be observed, that Harmozon and Armozeia are names prior to the whole race.

‡ There is another of these bridges at Haviza. They serve as dams, bridges, and roads at the same time; and there is a third on twenty boats, at Asker Mocram, Askier Mukierrem. See Otter, vol. ii. p. 52. All prove the great breadth of the rivers, at no great distance from their leaving the mountains.

§ Cheref-eddin, vol. ii. p. 170.

like Ab, and Roud; and Tchar is Dsjar, or Dâhr, a *mountain*; I conceive, therefore, that Tchar-Danké and Kho-aspes are synonymous, and both signify the mountain stream. If it were certain that the Ab-Zal of Cheref-eddin comes to Sufa, as he asserts, I should consider this proof as decisive.

Upon Timour's departure from Sufa on the second day, he passed the river Dou-danké, and on the *fourth* another stream called Couroucan-kendé; in these two streams I find the Kopratas and Pasitigris⁴²⁰ of Diodorus, who reckons them as the two rivers immediately east from the Eulæus; and in one place says, the Pasitigris⁴²¹ was *four* days' march from that river. Dou-danké I am not able to interpret, but Courou-Khan-Kendé⁴²² is the river of Khan Koorus, or Cyrus⁴²³, as we write it. This is the river Cyrus⁴²⁴ of the ancient geographers, so often mentioned with the Eulæus and Khoaspes, and sometimes confounded with them.

⁴²⁰ Diodorus calls it the Tigris in every instance but one.

⁴²¹ Lib. xix.

⁴²² Kendé, and Denké or Danké, I conclude are the same word, each by a different process, from Dsjenk, a river. See *supra*, Talmena. Otter, in enumerating the rivers of Mekran, vol. i. 408. gives them all the adjunct Kienk, or Chienk; which form passes into Denké, Danké, and Tanké, a stream noticed in that province by all the geographers; while the Kand-riakes of Ptolemy preserves the other form, Kendé, or Kandé. I will not deny what Mr. d'Anville asserts, that Kand is an adjunct expressing a fortress, as Samar-kand, Kand-ahar, Mara-kanda; but I should look to the river in all those sites. For the passing of Chienk into Dienk I appeal to Ptolemy, who writes Jumna, Diamuna, p. 170.

⁴²³ Always Kor by the Orientals, like the

Kopros of Dionysius.

⁴²⁴ Χωρίς μὲν ΚΟΡΟΣ ἐστὶ μέγας, χωρίς δὲ Χόασπις

ἔλκων Ἰνδὸν ὕδωρ παρὰ τὴν εἰρὴν χθόνα Σάσων.

Dionys. Per. 1073.

Salmasius reads Μηδὸν ὕδωρ for Ἰνδὸν; and it is remarkable that Ptolemy gives two sources to the Eulæus, *i. e.* Khoaspes, one within the mountains of Louristan, and one beyond them, in Media, with no less than three degrees of latitude difference. This is what is meant by Dionysius, that the original spring of Khoaspes is beyond the mountains, for which he uses Ἰνδὸν ὕδωρ (if it is his reading) very improperly, and this has an allusion to the river passing under the mountain Kho-asps. Cellarius uses this passage to prove that the Korus and Khoaspes are different rivers, but they are only different sources of one river, which joins the Eulæus.

I shall now take the passages adduced by Salmasius⁴²⁵, and shew that they all apply to the Pasitigris, as a source joining the Eulæus, and cannot be applied to the Arofis. Diodorus⁴²⁶, in the march of Alexander from Susa to Persepolis, places the [Pasi-] Tigris at the distance of four days' march from Susa. Q. Curtius, who evidently follows the same authorities, gives us almost a translation of this passage, and agrees in the distance; both unite in deriving this stream from the mountains of the Uxii, both correspond with Cherefeddin's distance of the Koorus, and with the progress of Timour when he proceeded to attack the Asciacs⁴²⁷, who are the Uxii that Alexander invaded by the same identical course; but Diodorus in another passage⁴²⁸, where he gives an account of the war between Antigonus and Eumenes, mentions this [Pasi-] Tigris as only one day's distance from Susa; which Cellarius explains, by supposing that an army without incumbrance, or a traveller, might pass in one day, what took up four days for a royal army, with all its baggage and attendants. The truth is, Diodorus followed his authorities without noticing their discordance. Strabo's testimony agrees with Diodorus in naming the two rivers immediately east of the Khoaspes⁴²⁹, Kopratas, and Pasitigris, and he every where marks the navigation of Nearchus up the stream by the title of Pasitigris; he adds, likewise, a manifest distinction between the Pasitigris and Arofis⁴³⁰, by stating that they are two thousand stadia a-part; by which he means, at their issue into the gulph.

⁴²⁵ Plin. Exer. p. 701.

⁴²⁶ Lib. xvii. vol. ii. p. 211. Ed. Wessl.

⁴²⁷ A an U are interchanged in the Persic. Usciucs approaches nearer to Uxii.

⁴²⁸ Lib. xix. vol. ii. p. 330. Ed. Wessl.

⁴²⁹ Diodorus calls it Eulæus; a proof that Eulæus and Khoaspes, at Susa, are the united stream, and that both are west of Susa.

⁴³⁰ Strabo writes Oroatis.

Let

Let us next advert to Arrian. After the battle of Arbela, he brings Alexander first to Babylon, and from thence, after a march of twenty days, to Susa. From Susa, he conducts him across the Pasitigris⁴³¹, in his way to enter the country of the Uxii. This progress is in perfect correspondence with Cheref-eddin's march of Timour; and this passage is parallel to those of Diodorus and Q. Curtius already produced, except that the Kopratas of Diodorus and Strabo is omitted, which, as it is a stream of less notoriety, might naturally happen. At this Pasitigris, we find Alexander again upon his return from the East, in his route from Persepolis to Susa; he had thrown a bridge of boats over it, or possibly such a bridge was the common passage of travellers; for it lies in the direct road from Ragian, on the Arofis, to Susa; and these bridges are the ordinary communication of the country. To this point Nearchus came up with the fleet; which the direction of the road from Ragian to Susa will enable me to fix within a few miles, when I come to treat of this subject: and the passage over this river to arrive at the capital evidently proves its locality east of Susa, in correspondence with Alexander's departure from it. This renders both the passages of Arrian consistent, and reconciles his account with those of Strabo, Diodorus, Q. Curtius, and Cheref-eddin. And so far is it impossible to confound this river with the Arofis, that Cheref-eddin⁴³² mentions two others between this and the Arofis—the rivers of Ram-Hermez and Fei; both which his commentator carries into the Al-Zal, or Eulæus, but d'Anville directs them to the Arofis. With this question I have no concern: but as Nearchus sailed up the Pasi-Tigris, I am not displeased to find in Diodorus a proof that it

⁴³¹ Lib. iii. p. 128.⁴³² Vol. ii. p. 185.

is navigable. The Kopratas⁴³³, he says, rising in the mountains [of Louristan] falls into the Pasitigris⁴³⁴, and the Pasitigris is impassable without a bridge; it is four hundred feet wide⁴³⁵, and as deep as the height of an elephant; all these circumstances are so perfectly consistent with the transactions which are to follow, that the omission of them would be inexcusable; and if I have unravelled a geographical difficulty, in which Salmasius, Cellarius, and d'Anville have been entangled, I have done a service to the science.

SUSA. SHUSHAN. TUSTER.

	Longitude	Latitude.
from Ferro, by Ptolemy,	84 0 0 —	34 15 0
from Ferro, by D'Anville,	66 31 0	
D'Anville, by Chart: Orb. Vet. notus,	66 10 0	
Ptolemy corrected by Goffelin,	60 0 0	
Otter, p. 50, vol. ii. Oriental,	86 30 0 —	31 30 0
Ibid. Etvals,	74 20 0 —	31 30 0

This longitude operates strongly against Mr. Goffelin's system, (and there are many similar ones,) because, if Ptolemy's error is always in excess, the error ought to increase in proportion to the distance from Alexandria; but here the error is in default, and not in excess.

⁴³³ If a derivation of Ko-pratas were requisite, I conjecture that it is to be found in Kho-Perat, or P'rat, the mountain that *limits* or *divides*: the boundary of the Uxii. ⁴³⁴ *Τισσαίρων πλῆθους*. See Salm. Pl. Ex. vol. ii. ⁴³⁵ *Τισσαίρων πλῆθους*. See Salm. Pl. Ex. p. 581.

Susa is the Shushan⁴³⁶ of Daniel, the Shuster, or Tostar, of the Oriental writers, and Susiana is their Chusistan⁴³⁷, the country of Chufis, or Sufis, more commonly written Kourestan and Chorestan. This appellation is now almost obsolete in the East, for in Persis and at Basra it is styled Ahwaz, or Haviza, from a town now become the capital. Susa is said by the Oriental writers to be the first city founded after the flood by a prince called Husheng⁴³⁸, who is the grandson of Caiumaras, the first name in their mythology. The Greeks call the founder Memnon, son of Tithonus, which amounts nearly to the same, implying that it existed before there was any real history to appeal to. Its name is said to signify a lilly, from the abundance of that flower in the neighbourhood; but I cannot help noticing that Hoo-chenk⁴³⁹, the founder, is related to Tchar-danké, meaning the Mountain River; and Kou-restan, Kho-restan, and Khu-sistan, all relate to a country

⁴³⁶ The Greeks have no SH or CH, as it is used in our pronunciation of *church*, and consequently Susa, Susiana, was written by them for Shushan. By a change similar to one in our own language, *Chúrch*, *Kirk*: Chousistan becomes Khousistan.

⁴³⁷ Khousistan, so called from the Khouz, a nation which inhabited it. Otter, vol. ii. 49. But Khouz signifies mountains, or mountaineers; and Sufii, Kiffii, and Kossæi are no doubt originally the same. Strabo, p. 728. quotes Æschylus to prove this of Sufii and Kiffii, and the passage is in point:

Οἱ τε τὸ Σῦσων ἢ δ' Ἐχκατάνων

Καὶ τὸ παλαιὸν Κισσίων ἔρκος

Προλιπόντες ἔσαν.

Perf. sub initio.

Between Kiffii and Kossæi the resemblance will hardly be doubted. These may be

the Khouz of Otter, if he chooses it; for the whole only goes to prove, that the inhabitants of the mountains occupied the plains, and carried their name with them over the whole province of Khousistan; and those who still remained in the mountains were still called Khouz and Kossæi. Khufis, in Greek letters, is Khyfis, and hence Kiffii.

⁴³⁸ Sir William Jones's Nadir Shah, p. 39.

⁴³⁹ Khoo-Kienk, Tchar-Kienk, or Chienk, are synonymous. I consider also Hucheng and Shushan as the same word identically. Hoo-chenk, however, must be a fabulous personage, for he is reputed founder of Babylon as well as Susa. Otter, vol. ii. p. 209. There are not wanting those who rather deduce Romulus from Roma, than Roma from Romulus.

surrounded

surrounded with mountains ⁴⁴⁰. These mountains, on the north of this province, throw down rivers from almost every bosom of the range; and the junction of these, causes all the confusion of names already noticed. Many of them seem to be streams of importance in an early part of their course, by the bridges we find constructed upon them; and their capacity of navigation, by means either natural or artificial, is the distinguishing feature of the province. The nature of the country below the mountains, which is a level ⁴⁴¹, furnishes a convenience for this improvement; and there is a canal, called Mefercan by Al-Edrisi, which united the Eulæus with the river that passes by Askar-Mokram ⁴⁴² and Haviza, and joins the Tigris a little below Khorna. Inland as this is, there is reason to suppose it affected by the tide, for Al-Edrisi mentions that it is more navigable at one time of the month ⁴⁴³ than another, and then carries vessels of a considerable size. This canal d'Anville conducts into

⁴⁴⁰ In asserting this, I always suppose that Susis and Susiana are softened forms of Khuffistan, in which Koo, or mountain, is the root. But if they are from su or soo, that word means *water* or *river*, as Kara-Sou, the Black River, &c. &c. The name is Khorestan, Khozestan, Cuzistan, and Curistan, for the Arabic *ج* without a point is *خ*, with a point *ج* is *ز*; so that the confusion in orthography is Oriental. See a very judicious discussion of these difficulties in a note by the English translator of Renaudot's account of two Arabian travellers in the ninth century. Preface, p. xxxii. This work was searched in consequence of the report made of it by Dr. Campbell in his extract inserted in Harris's Voyages, and hopes were conceived that something might have been found relative to

the Mekran and the Indus: but it appears that the Arabs, in the ninth century, followed the route marked out by Hippalus; that is, they came down the Gulph of Persia from Siraf to Mascat, and then stood over to the coast of Malabar with the monsoon. This is the general course at the present hour from the gulph to the coast, and almost constantly from the coast to the gulph.

⁴⁴¹ Susa itself seems to be on an eminence.

⁴⁴² Askier Mukierrem, ten leagues from Ehwaz, eight from Tustar. Otter, vol. ii. p. 52.

⁴⁴³ Et vero cum aqua in incremento est, quod evenit *initio mensis*, naves illic transeunt; cum autem in decremento, transire ne quam possunt. Nub. Geog. p. 123. He adds in another place: *Grandibus sulcatur navigiis*.

the river which he calls the Ab-Zal, or, more strangely, the Mosæus. The Ab-Zal he unites with the Gyndes, and so conveys it into the Tigris above Khorna, while he opens another communication with a stream he calls Sahaab, or Soweib, which comes into the Tigris below Khorna. This is the mouth⁴⁴⁴ of Niebuhr's Su-ab, which he calls the port of Ahwaz⁴⁴⁵, or Haviza, the modern capital; and it seems to maintain its ancient title, as Su-ab is the river of Su⁴⁴⁶, or Sufiana. It may not now be navigable to Toftar, for Toftar is a village; although there cannot be a doubt but that it is the original issue of the communication formed by the Mesercan; and I have great reason to suppose that there was a similar union of the Eulæus eastward with the Arofis, and that this is the ground of the assertion common to Strabo, Al-Edrifi, and Cheref-eddin; that all the rivers of Sufiana communicate with the Tigris. That Sufiana was a favoured province under the early dynasties we have sufficient evidence in the fortification of Susa, and in finding that it was the principal treasury of the empire: out of this, Alexander paid the debts of his army at the expence of twenty thousand talents, celebrated the nuptial feast of the Macedonian officers with their Persian brides, and rewarded the services of all that had a particular claim to distinction; out of this, he made the donation to the veterans he discharged at Opis, under-

⁴⁴⁴ In the collection of voyages by Melchisedeck Thevenot, (Paris 1663,) a map of the territory of Basra is inserted, from the authority of a native, intended to shew the numbers and situation of the Sabæans, or Christians of St. John. This map, which is without proportion of any kind, gives the relative situation of the rivers and places here mentioned, in perfect conformity to what I had previously collected from other authors.

This conformity gave me no little satisfaction. The only difference is, it places Howeiza (Haviza) on the upper stream of d'Anville, rather than on the Suab of Niebuhr, which is written Soweib; but Haviza is connected with both. See Thevenot, in fine Persepolis, vol. i. p. 24.

⁴⁴⁵ He seems to make them two towns.

⁴⁴⁶ Another mountain river.

took the support of all the children born to his followers in Asia, and found supplies for upwards of fifty⁴⁴⁷ thousand native troops raised in Persia; and yet this treasure was not exhausted at the time of his death, for the war between Antigonus and Eumenes was caused by a contention for this capital, which was still the richest in the empire. We are not, however, to suppose that this accumulation arose from the revenue of a single province, though the province itself was productive above all others. Strabo says, that the return of the crop was an hundred or even two hundred fold. Cotton, sugar⁴⁴⁸, dates, rice, and every grain of the finest species are enumerated amongst its natural productions; damasked steel, silk, cotton⁴⁴⁹, linens, and cloth of gold, amongst its manufactures. Such was Susiana in the early ages, and such it continued to the time of Sapor, and almost to the dissolution of the empire by the Agwhans. It is now a prey to every Arab invader, harassed by the Turkish arms from Basra on the west, and by the Persians from Schiraz on the east: a settled despotism protected the provinces it oppressed; the transient usurpations of the present day ravish not only the produce, but destroy the stock.

If I have dwelt longer upon the description of this province than the following short narrative of Nearchus's transactions may require, those who esteem geography as a science will pardon me. One object of my work is to elucidate ancient geography, and there is no portion of it more involved by erudition than this under contemplation. If I have made this consistent, and rendered it applicable to the voyage

⁴⁴⁷ Thirty thousand came out of Persis only, under Peucestas.

⁴⁴⁸ See Otter, vol. ii. p. 50. Who says the country is hot in the extreme, and unhealthy to foreigners. The natives are tawny; basanés.

⁴⁴⁹ Linteum virgatum Corcubæum, striped linen of Corcub, is mentioned by Al-Edrisi, p. 123. Corcub is upon the Gyndes. See Otter, vol. ii. p. 51.

I have undertaken to comment, I shall not easily recede from the ground I have taken by reference to ancient authorities, but appeal to those who may visit this country hereafter. Of that, indeed, there is little hope; for what merchant, what traveller, unless he be a BRUCE, will jeopardy his life to resolve questions of curiosity?

PASSAGE of NEARCHUS from the AROSIS to SUSIA.

WE left Nearchus at anchor in the mouth of the Arosis⁴⁵⁰, preparing to enter upon the navigation along the coast of Susiana; a course which, he informs us, he considered as attended with the greatest hazard and difficulty. Three shoals have been already noticed; one between the Arosis and Kataderbis, called Barcan; a second between Kataderbis and Khore Moofa⁴⁵¹, called Karabah⁴⁵²; and a third between Khore Moofa and the Khore Abdillah, named Ali-Meidan. These three shoals give exactly the three days' course of the fleet along the coast of the Delta, which, without a previous information of this kind, must have been in some degree unintelligible.

The fleet left the Arosis on the sixth of February, after taking on board a supply of water for five days, as the pilots informed them they were not certain of procuring any, while they were crossing the mouths of the streams which divide the Delta⁴⁵³; for the coast

⁴⁵⁰ Oroatis, Tab, or Endian.

⁴⁵¹ Query, Whether Khore Wastah?

⁴⁵² See *supra*, and M'Cluer, p. 30.

"When the pilot first makes the banks, they are called Karabah on the East, and towards the West Ali-Meidan."

⁴⁵³ *Χώρον . . . ἐν ᾧ ἔστιν ἐπὶ μέγα ἐς τὸν πῶτον ἐπέχουσαν.* So I read with Gronovius, ἐπὶ

χουσαν for *ἐπέχουσαν*; and I now advert to *ἐν ᾧ ἔστιν* for the last time; which the translation gives, as usual, *vadosum ac scopulosum*;—on a coast where a stone is not to be found. *ἐπὶ μέγα ἐς τὸν πῶτον ἐπέχουσαν*, expresses the breadth of the Ali-Meidan, which extends out fifteen or sixteen miles in the widest part.

was low, as they said, and the course along it in no great depth of water, on account of shoals which extended far out into the sea. This circumstance would consequently oblige them to stand off; and, when they came to an anchor, to anchor at a great distance⁴⁵⁴ from shore. The first day's course, indeed, partook not of these dangers, for the shoal Barcan⁴⁵⁵, between the Arofis and Kataderbis, is not of so great extent from the coast as those that succeed on the west, and the mouth of the river is sufficiently open, even in its appearance at the present day⁴⁵⁶. The shoal, however, seems to be noticed by the expression of Arrian upon the conclusion of the course; for he says, after a passage of about thirty miles they came to anchor at the mouth of a lake⁴⁵⁷, rather than an harbour, where there was abundance of fish. This may be considered as marking the nature of a shoaly coast, but the point is not material to insist on. The place was called Kataderbis, and an island which lay at the mouth, Margastana. In these two words there seems an evident allusion to an island still called Deree, and a tract called Dorghestan; but of the Bender Madjour which d'Anville, from the Turkish Geographer, allots to this station, I find no traces in any English chart. One-and-thirty miles, measured upon M'Cluer's chart, brings Nearchus to an anchor between the two islands Deree and Dereebouna, and one-and-thirty English miles end between Dereebouna and the main. In either position, Nearchus might have but one island in contemplation, and consequently have no cause to mention

KATADER-
BIS LAKE.
MARGAS-
TANA
ISLAND.
February 6.
One hundred
and twenty-
eighth day.

⁴⁵⁴ See the note of Gronovius in loco, where he shews that the translators were as bad interpreters as they were seamen.

⁴⁵⁵ The Tenagos Arenosum of Ptolemy is the shoal Barcan in this very position between

the Eulæus and the Arofis.

⁴⁵⁶ See M'Cluer's chart, three fathom on the bar.

⁴⁵⁷ ἐπὶ στόματι λίμνης ἰχθυώδους.

more. Their modern names are such as they have from the pilots; but, however applied, certainly relate to the inland Dera of Ptolemy, which gives name to the eastern channel of the Eulæus, evident in Deurak, still existing, and in the tract Dorghestan, allied, if I may vary the orthography, to the Morghestan⁴⁵⁸ of Arrian.

The river Dorack, I have already marked as the eastern branch of the Eulæus separating from the Karûn channel inland, falling in nearest to the Tab, or Endian, and embracing, not only one island, but several in its channel. Upon a review of Ptolemy at this place, observing that he mentions the mouth of the Eulæus immediately next to the Arofis, and has the Mosæus only, without noticing the other channels between the Eulæus and the Tigris, I am more confirmed in my opinion, that his Mosæus is the branch we now call the Karûn, with Khore Moosa at its issue; and that the Mesene comprehends, not only the strip between the Bamishere and Cossifa-Bony, but perhaps as far as the Karûn also.

The two islands at the mouth of the Dorack are not accurately named, for Bouna is apparently a channel rather than an island, and seems to correspond in contradistinction to the Cossifa-Bony, either as such, or as a boundary and termination of the Delta. The Oriental geographers place a fort here, called Medhi and Modhi⁴⁵⁹, perhaps in the situation of Moshure, in Mr. Dalrymple's chart; and it is not impossible that somewhere in the bay, formed by the mouths of the Dorack, d'Anville's Bender Madjour may be discovered; it cannot be where the map of his Memoir places it; for

⁴⁵⁸ I do not search for an error in the initial letter; for I believe the change to arise from some Oriental orthography, which I cannot discover.

⁴⁵⁹ Hisn-Modhi, Arx-Modhi, Hisn-Arx, Castellum. Gol. ad Alfrag. p. 248. Xin. idem.

the coast there is covered with the shoal Barcan, and d'Anville's three ⁴⁶⁰ maps are all particularly incorrect on this part of the coast. I make the less scruple of asserting this, because M'Cluer has not only laid down this coast totally different, but all our English charts; these have at least the authority of the native pilots, and M'Cluer, I conclude, his own observation; for he has added the soundings, and that he would hardly have ventured to do without sufficient authority, on a coast where the land cannot be approached near enough to be seen, and where the course must principally, if not wholly, be directed by soundings.

I am now to conduct the fleet across the shoals which fringe the Delta; and in this course I discover the Karabah and the Ali-Meidan as manifestly as in a modern map. On the first day they sailed as soon as it was light; and, forming a line by single ships, each followed in order, without deviating to the right or left, through a channel marked out with stakes in the same manner as the passage ⁴⁶¹ between Leukas and Akarnania, in Greece: but, says Arrian, at Leukas there is a firm sand, and if a vessel grounds she is easily got off again; but in this passage it was a deep mud on both sides, so that a staff could find neither support or resistance; or if, when the vessel grounded, the people got overboard to ease her off, they found no footing, but sunk in higher than the waist. Now it is true that a muddy shore, and the staking out a dangerous passage, is not peculiarly characteristic of one coast more than another, for the practice is sufficiently general; but it is very extraordinary that this

SHOAL.
First day's
course.
February 7.
One hundred
and twenty-
ninth day.

⁴⁶⁰ Map of Asia, first part. Tigris and Hampshire. And in the year 1786, I saw the Euphrates. Memoir. Elephant man of war just launched at Bursle-

⁴⁶¹ And many other passages in different parts of the world. Lymington river in the same manner.

circumstance

circumstance should be so decidedly noticed on this part of the coast by Arrian, Ptolemy, Pliny, Marcian, Al-Edrifi, and Thevenot, with little variation. There is a bay between ⁴⁶² the Mosæus ⁴⁶³ and the Eulæus called Sinus ⁴⁶⁴ Pelodes in Ptolemy, and Sinus Ste-loas in Marcian. Salmasius ⁴⁶⁵ and Hudson will not allow Marcian to retain his own reading, but reduce him to the standard of Ptolemy. The truth is, however, that he has preserved one feature and Ptolemy another, both belonging to the same face of the coast; for these two terms translated are nothing more than *Muddy Bay* and *Stake Bay*; proving that Marcian is not a mere copyist of Ptolemy, but sometimes also a commentator. Pliny bears testimony to the former circumstance, and Thevenot ⁴⁶⁶ mentions the entrance of the Karûn as still marked by a stake of palm wood, when he arrived at the mouth. Let us now consider the nature of the Karabah, as it has been already noticed, and we shall discover the cause that gives rise to this circumstance. The term of *broken ground* ⁴⁶⁷ applied to this shoal arises from the irregularity of the soundings and overfalls on it, and the fiction of a city sunk here is noticed by several authors. The soundings, according to M'Cluer, vary from twelve to seven and eight,—to ten, seven, and five fathoms. As soon as the modern pilot finds these, he keeps away west for the Ali-Meidan; but the course of Nearchus seems to have been across this bank, and, as nearer shore, naturally with shallower water; but the inequality of the bottom as naturally offered the means of exploring a channel across. This is the channel that we may conclude was marked out by the

⁴⁶² An additional proof that Ptolemy's Eulæus is the Dorack channel. His Mosæus, the Karûn.

⁴⁶³ Between the Karûn and the Dorack.

⁴⁶⁴ Στηλώαν κόλπον, Πηλώδη κόλπον. Marcian.

⁴⁶⁵ In alterutro mendum esse necesse est. Sal. Plin. Ex. p. 701.

⁴⁶⁶ In p. 16.

⁴⁶⁷ Karabah, broken; from the Persian root Karab, to break. Mr. Jones.

natives.

natives. An attention of this kind is perfectly consistent with the commercial spirit of the province, and proceeds upon the same grounds as the navigation inland. A passage over or through the shoal is necessarily implied in the account of the journal; the accomplishment of it is reconciled to reason by the method I have pursued, and in whatever state the coast may now be, it can hardly afford a ground of objection to my statement of what it might have been at the distance of so many centuries. Amidst all disadvantages of ancient navigators, they had one advantage arising from the little depth of water the construction of their vessels required.

Through a passage, then, of this sort, Nearchus conducted his fleet thirty-seven miles, and then came to an anchor without being able to approach the shore. Here they took their repast on board, and gave the people some time for refreshment. I have no hesitation to fix this anchorage in the Khore Wastah, the issue of the Selege stream⁴⁶⁸, for there the measure given agrees perfectly with M'Cluer, and there he seems to terminate the Karabah. It is a minute circumstance, but worth noticing, that both Ptolemy and Marcian agree in making the eastern commencement of the bay, Pelodes, at some distance from the Eulæus, or Dorack, and their termination of it is at the Mosæus, or Karûn, which would naturally happen, as they take no notice of the intermediate channel, or Khore Wastah.

From this anchorage the fleet weighed in the night, after allowing a short respite from fatigue, but they had no longer a shoal to cross; they failed in deep⁴⁶⁹ water, says Arrian, manifestly marking

⁴⁶⁸ It amounts to thirty-two geographical miles, equal very nearly to thirty-seven miles English.

⁴⁶⁹ *κατὰ βάθος*, four fathoms, would be *κατὰ βάθος* to a Greek fleet.

SHOAL.
Second day's
course to
DIRIDOTIS.
February 8.
One hundred
and thirtieth
day.

the course along the border⁴⁷⁰ of the 'Ali-Meidan, which every vessel bound for the Basra Channel still pursues. They sailed all night and the whole of the following day till past noon, when they finished their course at Diridotis, a village in the mouth of the EUPHRATES.

The distance assigned for this passage across the 'Ali-Meidan is nine hundred stadia, or upwards of fifty-six miles, a measure which is very dubious, as Nearchus informs us he was able to keep no regular account, and the statement of the moderns is so various, that I prefer giving their own distances to fixing any determinate measure of my own.

D'ANVILLE.

Geog. Miles. G.M.

Memoir ⁴⁷¹ . Measure from the Karûn to Khore	} 30. add 7 — 37
Abdillah, — — — — —	
Map of Asia, first part, — — — — —	33. add 7 — 40
Map of Tigris and Euphrates, — — — — —	30. add 7 — 37

M'CLUER.

Large Sheet from Wastah to Khore Abdillah,	— 40
Small Sheet from Wastah to Khore Abdillah,	— 34

DALRYMPLE.

Anonymous Chart from Karûn to Khore Abdillah,	46
from Wastah to Khore Abdillah,	— 62

NIEBUHR.

From Karûn to Khore Abdillah (dubious),	40. add 7 — 47
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⁴⁷⁰ Upon this flat there are six fathoms on the southern edge, five fathoms on the middle, four at the upper end. The pilot seldom goes under five, or five and an half.

M'Cluer, p. 30. "When you come within two fathoms, you are still near ten miles from

"shore," and this part is dry at low water.

⁴⁷¹ I have eighteen draughts to consult, but these are all worth specifying. Seven miles are added for the difference between the Karûn and Wastah; but some of the charts make it ten.

If such are the fluctuations of the moderns, how are we to reduce a journal of the age of Alexander? M'Cluer's small sheet is a corrected draught, and his corrections usually promote a coincidence with Arrian; but how are we to reconcile his estimate with that of Mr. Dalrymple's chart? It is true that I esteem Mr. Dalrymple's, in point of disposition, as the best of any which I have seen; but I have reason to consider all its measures as too large; this will appear more fully when I come to treat of the coast in general.

Diridotis, or Terédon, is the termination of the voyage by sea, and evidently both forms mark its connexion with the Diglito of Pliny, and the Tigris of the Greeks, as they are both related to the Oriental Degela, or Didsjile⁴⁷². Diglidoth⁴⁷³, intimating a town situated near the Degela, will give the two forms of Diridotis and Terédon, with the usual interchange between R and L, which appears in many other instances. This place Arrian calls a village, where there was a mart established for the importation of the incenses of Arabia, and its situation fits it for the conveyance of them up to Mesopotamia, either by the old canal at the Khore Abdillah, or by the Schat-el-Arab to Susiana, or Persis; and this circumstance has recommended it to the notice of all the ancient geographers. I have already mentioned that Ptolemy places Terédon between the two mouths of the Tigris, which evidently proves that he considered d'Anville's Choabedeh, as a mouth of the Tigris, and not of the Euphrates. And as I have before accounted for Pto-

⁴⁷² Niebuhr writes, Didsjile.

⁴⁷³ One reading of Diglito in the MSS. of Pliny is Diglath, equivalent to Degelah.

Pliny means by Diglito, the upper part of

the Tigris - *quæ tardior fluit*; and gives Tigris as a second name, where the course is as swift as an arrow.

lemy's Sinus Mefanius, the whole of ancient geography is thus rendered consistent with itself, and with our modern charts.

It will seem extraordinary that, when the course of Nearchus lay up the Tigris, or Schat-el-Arab, he should pass the mouth of that channel, and bring his fleet to an anchor in the Khore Abdillah, which he calls the mouth of the Euphrates. This, according to Pliny's account, was just going twenty-five miles out of his way, and causing a necessity of re-measuring his course back again the same distance. Pliny's estimate, computed by d'Anville's method, is reduced to twelve miles and an half; and the real distance, taken largely, may be about ten. If, therefore, it is asked why this happened, the answer will exhibit one of those minute coincidences which nothing but truth could suggest. It is a circumstance connected with the nature of the navigation, and it continues to be the practice of the pilots to the present hour, for thus M'Cluer describes the course:

.... "After⁴⁷⁴ these soundings in Khore Gufgah, you will
 "quickly shoalen to four one-half fathoms, and this the pilot calls
 "Mucan⁴⁷⁵; and from that, three one-half or three fathoms to
 "Bufforah Bar⁴⁷⁶. With these soundings, he still stands across [the
 "mouth of the Schat-el-Arab], west or west by north, till he
 "deepens to five fathoms in Khore Abdillah, and there he anchors
 "till the next flood tide; or, if he has sufficient tide to carry him
 "over, he stands away to clear a bank between Khore Abdillah and
 "the Bufforah river."

I now beg leave to notice, that the pilot on board Nearchus steered exactly the same course as M'Cluer's Karack pilot two

⁴⁷⁴ M'Cluer's Memoir, p. 30.

⁴⁷⁵ The Mesene.

⁴⁷⁶ The bar at the mouth of the Cossibony, or Schat-el-Arab, as I use it.

thousand years afterwards; so durable is the stamp that Nature has set upon this coast. The reason of this is obvious; for the projection of the Ali-Meidan throws the vessel off the coast till she is opposite to the Khore Abdillah, and the level of the land is so low at the mouth of the Schat-el-Arab, that it is much safer for her to make land in the Khore, than to stand up the Schat-el-Arab at once, when the coast on either hand is too low to be visible.

While Nearchus lay at anchor in this Khore, which he calls the Mouth of the Euphrates, intelligence was received that Alexander was on his march to Susa. He determined, therefore, to return *back*⁴⁷⁷; and then, by pursuing his course up the Pasi-Tigris, to join him in the neighbourhood of the capital.

Here it is that, in my endeavour to explain the following day's course, I am obliged to differ totally from d'Anville, I appeal to the candour of the reader, that no captious love of opposition may be imputed to me, for I have too great a deference to that great geographer's opinion, ever to depart from it without sufficient grounds.

The passage is only six hundred stadia from Diridotis to Aginis. d'Anville places Aginis at Zeiné, in the Schat-el-Arab. I say that Nearchus never entered the Schat-el-Arab, and I place Aginis at the mouth of the Karûn, or Khore Moofa. This is the difference between us. D'Anville's best argument is the similarity between Aginis and Zeiné; and, when the local circumstances are first fixed, I hold similarity of names to be one of the best of proofs; but to derive the locality from the sound, is commencing the argument at the wrong end.

AGINIS.
February 9.
One hundred
and thirty-
first day.

⁴⁷⁷ Εἰς αὐτὸ τὸ ΟΠΗΣΩ ἔπλεον, p. 357.

My

My reasons for assuming a different course are these:

1st, Pliny's Chaldean Lake, and Arrian's Lake at the mouth of the Tigris, are not the same.

2dly, Arrian's Pasitigris is never the Schat-el-Arab, and in this he is supported by Strabo.

3dly, In the passage of Nearchus up the river, no notice is taken of the canal of Haffar, but only upon Alexander's course down to the gulph.

4thly, Nearchus is said to go up the Pasitigris, Alexander is said to come down the Eulæus.

5thly, Nearchus, in his course from Diridotis to Aginis, sailed with Susiana on his *left*.

1st, The CHALDEAN LAKE.

NEARCHUS sailed⁴⁷⁸ across a lake into which the Tigris falls at its issue into the gulph; but if this lake exists, or ever did exist, it must have been at the mouth of the Schat-el-Arab, and could not be the same as Pliny's Chaldean Lake; for that commences below Ctesiphon, and ends at Aphle; and he adds afterwards, that the waters, after spreading in this form, are again collected into a stream, and in that shape take their course to the sea. His⁴⁷⁹ Chaldean Lake,

⁴⁷⁸ ἀπὸ δὲ τῆς Αἰώνης εἰς αὐτὸν τὸν ποταμὸν ἀνὰ πλεῖς στάδιοι ἐξακόσιοι, ἵνα καὶ κώμη τῆς Σησιδος ᾗ καλεῖσθαι Ἀγινί. Ar. 357.

⁴⁷⁹ Susa a Persico mari absunt ccl. m. pass. qua subiit ad eam [ea] classis Alexandri Pasitigri. Vicus ad Chaldaicum Lacum vocatur Aphle; unde Susa navigatione lxxv. m. pass. absunt.

This Pasitigris is the Schat-el-Arab, and Pliny supports d'Anville in supposing the passage up that stream; but his Lacus Chaldaicus will not accord with d'Anville. Tigris inter Seleuciam et Ctesiphontem vectus in

Lacus Chaldaicos se fundit. Eoque lxx. m. pass. amplitudine implet. Now lxx. miles will not reach from Ctesiphon to Aphle by two hundred, and still Aphle is at the lower end of this lake. See lib. vi. c. 27.

But Pliny, lib. vi. c. 23. followed a different authority. He there is giving an account of this passage of the fleet from the historians of Alexander, and there we find (not the Chaldean lake) but a lake at the mouth of the river. Ostium Euphratis. Lacus quem faciunt Eulæus et Tigris juxta Characem, inde Tigri, Susa. (Lege) inde Pasitigri, Susa.

therefore,

therefore, is not at the mouth of the Schat-el-Arab, but inland, and its termination at Aphle; which, if Aphle and Haffar are the same, is upwards of sixty⁴⁸⁰ miles from the mouth. This, I conceive, is the first source of d'Anville's mistake, and Pliny's error in assuming Pasitigris, as the appellation of the Tigris and Euphrates united in the Schat-el-Arab, is the ground of his making the fleet go up that channel, instead of the Karûn, or real Pasitigris. D'Anville follows him in this assertion, and here is his second mistake.

For, 2dly, Arrian's Pasitigris is always that stream which, flowing east of Susa, joins the Eulæus at some distance below that capital. I have proved this by the concurrent testimony of Strabo, Diodorus, Q. Curtius, and Cheref-eddin, all according with Arrian. It did not approach the city; it was a broad, deep, and navigable river: it crossed the road from Persis; and, after its junction with the Eulæus, the united stream separated again, sending off one branch eastward, now called the Dorack⁴⁸¹, and another westward, which is the Karûn; and, finally, its characteristic distinction is the title of *Pasi*, or *North Eastern Tigris*, in opposition to the great stream of that name, which is now styled the Schat-el-Arab⁴⁸². This is manifestly the system of Arrian; and Strabo, in explaining the error of some historians who attributed this appellation to the Schat-el-Arab as the general channel which received *all* the different rivers, as manifestly confirms the system of Arrian, and proves the concurrent opinion of all the authors in the age of Alexander.

⁴⁸⁰ I measure to the bar of the Cossibony, or Basra Channel.

⁴⁸¹ The Eulæus of Ptolemy.

⁴⁸² The Schat-el-Arab is always styled Degela, or the Tigris, by Al-Edrisi.

3dly, If Nearchus had gone up the Schat-el-Arab, he could have entered the Eulæus, or Pasitigris, only by the Haffar Canal; is it then not remarkable that, when at Aginis, he specifies the progress of the following day as up the Pasitigris⁴⁸³, and not up a canal? but if Nearchus had sailed up this canal, there is much more reason to conclude it would have been specified in a course he performed himself, (where it is not specified,) than in the descent of Alexander, where it is mentioned, and in which he was not so immediately or personally concerned. This, considering the tenor of the journal, is one of the strongest evidences which can be produced; for an artificial cut was no common object to a Greek, and a similar circumstance is preserved at Heratemis, though the passage was neither explored, or made any part of the navigation. An omission, it is true, is only a negative proof, but in an instance of this kind it must have considerable weight.

4thly, There is no inconsistency in mentioning Alexander's descent by the Eulæus, and Nearchus's ascent by the Pasitigris, for Nearchus entered the river from the sea where it bore this appellation in contradistinction to the Tigris, and Alexander embarked at Susa, where that source, which passes the capital, is called the Eulæus. The various heads⁴⁸⁴ of this stream cause confusion in the interior; the various arms, as it approaches the sea, create disorder upon the coast. It is thus that the Eulæus and Choaspes are transmutable, and that the Eulæus of Ptolemy is not the same as Arrian's at its mouth, but the Dorack. If Alexander embarked at

⁴⁸³ ἰθὺς κατὰ τὸν Πασιτίγρον ἄνω ἔπλεον.
Arr. p. 357.

⁴⁸⁴ En Turquie en Perse et aux Indes une
même rivière prend le nom de toutes les villes

et villages ou elle passe, et ainsi il est mal
aisé que les voyageurs s'accordent bien pour
ces noms. Tavernier, lib. v. p. 733. Amst.
edit.

Sufa, the stream was necessarily the Eulæus till it joined the Pasitigris, and the name was easily continued after the junction. If Nearchus entered the Pasitigris, the preservation of the same title in his course upwards, obviated ambiguity; and when he reached the junction, his progress up the eastern source distinguishes again the Pasitigris from the Eulæus. By the latter he would have reached Sufa, by the former he effected his junction with the army.

5thly, The expression of Arrian is precise, when he asserts that Nearchus sailed *back again* from Diridotis to Aginis, if Aginis is in the Delta on the Khore Moofa; but it is not equally apposite, if he returned only to the Schat-el-Arab. It appears evident that he had intended to go up the Schat by the course he held, but that the account he received at Diridotis informed him that the king was directing his course to Sufa; this intelligence carried him back to the Pasitigris, as the shortest passage to the capital, for such it is; while the navigation up the Schat-el-Arab and through the Haffar canal was either unknown to him at that time, or not in his contemplation. But this is not all; he passed from Diridotis back to Aginis with Susiana on his *left*. Could this be true, if he had sailed up the Schat-el-Arab? Let any advocate of Mr. d'Anville inform me, if ever the tract on the west of the Schat-el-Arab was called Susiana by any geographer, ancient or modern? Whether it was possible for Arrian to terminate that province west, at the Euphrates⁴⁸⁵ instead of the Tigris? No. It was always styled Arabia, by the concurrent testimony of historians and geographers, as it is to the present day, and it was always possessed by Arabs, whose influence reaches to the very walls of Basra.

⁴⁸⁵ The Khore Abdillah is the Euphrates of Arrian.

If, however, it can be supposed that Nearchus made his⁴⁸⁶ Euphrates the boundary of Susiana, the difficulty will be increased; for then, in sailing up the Schat-el-Arab, the expression ought to have been, that he proceeded up the Schat-el-Arab *through Susiana*, not with Susiana *on his left*; for, if the Tigris is the boundary, in going up it, Susiana must be on the *right*.

The whole of this error originates⁴⁸⁷ with Pliny; he knew, from the historians of Alexander, that the fleet went up the Pasitigris; but his Pasitigris is the Schat-el-Arab, and theirs is the river connected with the Eulæus. If this error had not misled so great a geographer as d'Anville, all that has been said would be superfluous.

These are my reasons for adopting the following system; and it will now be easy to conduct Nearchus from Diridotis to Aginis by the course which is here assumed. These are the words of Arrian: "At Diridotis⁴⁸⁸, intelligence was received that Alexander was advancing to Susa; the fleet, therefore, returned back again from Diridotis, in order to proceed up the Pasitigris, and join the army. They sailed accordingly on their return, with Susiana on

⁴⁸⁶ The Khore Abdillah.

⁴⁸⁷ It originates actually with those Greek writers whom Strabo reproves for the same mistake.

⁴⁸⁸ Εἰσαῦθα ἀγγέλλεται Ἀλέξανδρον ἐπὶ Σέσων ἔλλεσθαι· ἔθεν κ' αὐτοὶ τὸ ὀπίσω ἔπλεον, ὡς κατὰ τὸν Πασιτίγρην ποταμὸν ἀναπλώσαντες συμμίξαι Ἀλεξάνδρῳ. Ἐπλεον δὲ τὸ ἐμπλαῖν ἐν ἀριστερὰ τὴν γῆν τὴν Σασσίδα ἔχοντες· κ' παραπλέωσι λίμνην εἰς ἣν ὁ Τίγρης ἐσβάλλει ποταμός· ἀπὸ δὲ τῆς λίμνης εἰς αὐτὸν τὸν ποταμὸν ἀνάπλεον ἑτάδοι ἐξακόσιοι ἵνα κ' κάμῃ τῆς Σασσίδος ἣν καλεῖσιν Ἀγινῶν. Arr. p. 357.

To make these words accord with a passage up the Tigris, or Schat. ἀπὸ δὲ τῆς λίμνης εἰς

αὐτὸν τὸν ποταμὸν must be rendered, from the lake UP the river; but ΕΣ cannot be so rendered. It is TO the river. And again—αὐτὸν τὸν ποταμὸν must then be a different river from that which is expressly declared to be their object before, κατὰ τὸν Πασιτίγρην ποταμὸν.

The refutation of any such construction, and the confirmation of that which I adopt, is contained in a following passage. That is, when the fleet proceeded the next day from Aginis: ἐνθενδε κατὰ τὸν Πασιτίγρην ἄνω ἔπλεον. From thence, [from Aginis,] they sailed up the Pasitigris. *The river*, therefore, is the Pasitigris, and not the Tigris.

" the

“ the left. The first part of their course was across a lake into
 “ which the Tigris disembogues itself; and from this lake
 “ to the mouth of the river [Pafitigris], the distance was six hun-
 “ dred stadia: at the termination of their course was a village of
 “ Susiana, called Aginis.”

In commenting on this passage, Mr. d'Anville commits two errors; for he calls the lake, the Chaldean Lake, which it has been proved not to be; and he then adds, that the extent of the lake is six hundred⁴⁸⁹ stadia, though the text says directly the reverse. “ They
 “ passed the lake, and from the lake to the river the distance was
 “ six hundred stadia.” He adduces the testimony of Strabo⁴⁹⁰ to prove this, but Strabo does not mention the extent of the lake at all.

The existence of this lake at the mouth of the Tigris, or Schat-el-Arab, must now be sought for; and, if we take a view of the map, we find a tract on the west of that stream called Dauasir by Niebuhr, the extreme point of which between the Khore Abdillah and the Schat-el-Arab we must sink, to find room for this lake at the mouth of the Tigris; and that this was really under water in the age of Alexander, and rose gradually to its present appearance, either by accumulation or artificial means, we have abundant evidence to prove. The very name⁴⁹¹, if I am not mistaken, implies inundation; and Niebuhr supposes the whole level as high as Haffeinad, the burial-place of Hassan-ben-Hanefie, to have been under water, and even that it would be so at this day, if the inun-

⁴⁸⁹ La traversée de ce lac pour la flotte
 d'Alexandre fut de six cens stades. Mem.
 181.

⁴⁹⁰ P. 729.

⁴⁹¹ Kerme-sir, the hot country; Daua-sir,
 the watery country. But?

dition were not prevented by dykes. "Every where, (he says⁴⁹²),
 "canals are cut to convey water to the date grounds; and as the
 "water of the river is saturated with slime, the land here must, in
 "a succession of ages, have been raised considerably to have ob-
 "tained its proper level." This supposition of Niebuhr's is in
 perfect harmony with an assertion⁴⁹³ of Pliny's, that the inundation
 of the waters is no where so extensive as in this part of the river.
 Another circumstance is the rising of Abadan, a town at the mouth
 of the Schat-el-Arab, at the extremity of the Dauasir; for it seems
 possible to trace this from its emersion; first, in the form of an
 island, and afterwards as part of the main occasioned by the de-
 parture of the waters. I looked for it in two Apphadanas of
 Ptolemy, but the position of neither answers. Marcian⁴⁹⁴, however,
 expresses himself thus: "Near this part⁴⁹⁵ of Susiana lies an island
 "called Apphadana⁴⁹⁶, which some attribute to Arabia." This
 seems to shew the emersion of land at the point of the Dauasir,
 between the age of Alexander and the time of Marcian. The con-
 nexion of this island with the main, or rather the withdrawing of
 the waters which separated it, seems to have taken place in a later
 period; for that it was united in the time of Al-Edrifi is evident.
 "Abadan, (he says⁴⁹⁷), is a small fort, but still in good condition,

⁴⁹² Vol. ii. p. 169. Amst. edit.

⁴⁹³ Non alio loco plus proficere aquæ terris
 investæ. Plin. lib. vi. c. 27.

⁴⁹⁴ Marc. Heracl. p. 17. Geog. Min.
 Hudson.

⁴⁹⁵ The Pafini Charax.

⁴⁹⁶ The translation reads Apphana. There
 is a coin in the possession of Mr. Cracherode,
 and in Dr. Hunter's Museum, inscribed
 ΕΞΕΛΑΗΝΕ, which is by some imputed to
 Aspendus; but if it should appear that the

Syrian Greeks possessed the mouths of the
 Euphrates, this word would read ΕΣΩΕΔΕΝΕ,
 not far removed from Apphadana.

⁴⁹⁷ Est autem Abadan Arx parva quidem,
 sed integra, ad litus maris apposita, quæ in-
 servit ad observandos atque protegendos eos,
 qui subeant mare prædictum jacetque Abadan
 ab occidentali parte Degelæ [Tigris] amnis
 qui eo in loco maximè diffunditur super terram.
 Al-Edrifi, p. 121.

“situated near the sea, which is intended for watching and protecting those who frequent this part of the coast, it lies on the western bank of the Degela [Tigris], in a part where that river particularly *spreads itself over the land*⁴⁹⁸.” The same author adds a remarkable circumstance, which, though not connected with the inundation, is so uncommonly local, that it is worth inserting. “Six miles below Abadan lies Al-chasfiabat, which signifies a stage raised upon piles in the sea, where there is a watch kept, and those who are appointed for that service repair to the stage in boats, and return by the same conveyance.” This fact is so connected with the navigation of the Schat-el-Arab, that whether the duty of this watch was for the purpose of giving signals, or affording pilotage; it marks strongly the attention paid to the security either of the country or of the navigators, and that, no more than the lowness of the coast demanded. This stage seems evidently on the point of the shoal, between the Khore Abdillah and the Schat-el-Arab.

Such is the nature of the Dauafir at its termination, and such is the evidence to prove that there was a lake in the age of Nearchus⁴⁹⁹, where there is now land; that the land had emerged in the form of an island in the time of Marcian; and that, before Al-Edrifi wrote, it was united to the main. This is a fact of no small importance to ascertain. As the want of a lake at present forms one ground of objection to the authenticity of the journal. The

⁴⁹⁸ Tout le pais est si bas que sans une digue qui regne le long de la mer il seroit souvent en danger d'estre submergé. Tavernier, lib. ii. p. 243. I find nothing of this dyke in other authors, unless it be the dyke in the river mentioned by Niebuhr. But the passage concurs

in the lowness of the land. In p. 245 he mentions the breaking of this dyke, and that then the waters came up to Basra.

⁴⁹⁹ Anno 326 A. C.

400 post Ch.

1100 post Ch.

name of Abadan still exists at the mouth of the river, in the Tschabde and Tschwabde of Niebuhr⁵⁰⁰, which he makes two villages, possibly out of one. McCluer has also an Abadan, but too high up the river, and on the eastern instead of the western side.

I have been the more particular in stating all the circumstances relating to this point of the Dauasir, on account of the numerous errors attending it; and I must now observe that I am not bound by the text of Arrian to fix upon any particular extent of the lake; for he mentions only that the fleet crossed it, and that, from the lake to the Pasitigris, the distance was thirty-seven miles and an half. The extent of it up the Tigris I am not concerned with, but I should not carry it, with Niebuhr, thirty miles up to Haffeinad; for Mr. Jones, who has passed frequently up the channel and down, seems to think, that the western bank is every where too high to admit of inundation, till within eight or ten miles of the mouth; but that part, he says, has undoubtedly been under water, and thus does the testimony of a living witness confirm all our written evidence.

The map will now conduct us, after passing the lake, across the Ali-Meidán, back again to the Karûn, which I consider as the Pasitigris, and Aginis as a village at its mouth. The general depth of water on the Meidán, nearest to the coast, is two fathoms at high water; and consequently, if Nearchus sailed upon the flood, there is ample allowance for the draught of his vessels, which was certainly not more than nine feet, and probably less than six: and

⁵⁰⁰ See Tab. LX. vol. ii. Amst. edit.

here,

here, at Aginis, I make him anchor with the view of pursuing his course up the Karûn the succeeding day.

Here a greater difficulty occurs than that which I have been endeavouring to unravel; for, according to the journal, the extent of the coast from the Arosis to the Pasitigris is two thousand stadia, while the three days' course makes it two thousand to Diridotis; and if Nearchus came back to the Karûn, as I state, six or seven hundred stadia ought to be subtracted from the two thousand. This difficulty is not lessened by adopting Mr. d'Anville's system, for then it must be added instead of subtracted, so that the difference is equal, either in excess or default: for this there is no better solution than what the journal itself affords, that Nearchus himself confesses he kept a very uncertain account in this passage; and I am sorry to add, that the disagreement of our modern charts enables me to produce nothing certain upon the subject. Mr. Dalrymple's anonymous chart⁵⁰¹ is the only one that gives thirty-seven miles between the Schat-el-Arab and the Karûn, agreeable to Nearchus. The others vary so much, that I prefer a statement of the whole to any explication of my own, and I am constrained to take the measure from the Arosis to Diridotis according to the daily course, rather than to the Pasitigris, as Arrian reckons, because in one instance I have particulars specified, and in the other only a general sum. My reckoning may be reduced to Arrian's, by taking off from thirty-seven to forty-seven miles, the supposed distance between Diridotis and Aginis.

With much diffidence, then, I submit the following statement

⁵⁰¹ I always suppose the measure of this chart to be too large.

to the reader ; for greater disagreement, in so small a space, is hardly to be found :

	<i>Stadia.</i>	<i>Miles Eng.</i>
From the Arofis to Kataderbis, -	500	
to Khore Waftah, -	600	
to Diridotis, -	900	
	2000	125

	<i>Nautic Miles.</i>	<i>Miles Eng.</i>
Arrian from the Arofis to Diridotis,	—	125
D'Anville's Map of Asia, -	105	nearly 122
D'Anville's Memoir, - -	75	— 87
M'Cluer's large sheet, - -	80	— 93
M'Cluer's small sheet corrected, -	90	— 105
D'Apres - - -	80	— 93
Gough's chart, - - -	81	— 94
Niebuhr ⁵⁰² , - - -	90	— 105
Dalrymple's anonymous chart, -	137	— 160
Pliny, - - -	—	265
Pliny, by another estimate, - -	—	250
Pliny, halved by d'Anville, - -	—	125
Marcian of Heraclea, 3430 stadia, -	—	214
Marcian, by Salmasius, 1830 stadia, -	—	114
Ptolemy, fix ⁵⁰³ degrees - -	360	— 417

Such is the fluctuation of this estimate, and perhaps, out of the whole list, M'Cluer is the only one who formed his statement from

⁵⁰² Niebuhr possibly saw M'Cluer's papers at Basra.

⁵⁰³ In reality fix one-half. Terédon, 80°. Oroatis, 86° 30'.

observation,

observation, or the account of the native pilots. Arrian differs from him only twenty miles, and on a coast where, he informs us, Nearchus could keep no true reckoning; it is extraordinary that his deviation should be no greater. Pliny had evidently found the same number of stadia, but doubled the distance by using the Olympian stadium in his reduction. Mr. Dalrymple's anonymous chart⁵⁰⁴ exceeds in reality all but Ptolemy; and it is a great disappointment to find that a chart, upon which depends the best information for elucidating Arrian, should be so defective in its measurement. It is, however, by no means ascertained that the head of the gulph is correct in any chart; on the eastern part, even M'Cluer may be deemed dependent upon the information of his pilots, and though their estimate is sufficiently just to answer their purpose, it is far inferior to the observation of an English navigator.

From Aginis, Arrian reckons it only five hundred stadia, or thirty-one miles, to Susa, in which there is evidently an error either in the estimate or in the manuscripts. D'Anville supposes that the letter expressive of a thousand has been lost, and Greek numerals, as single letters, are easily omitted: to his opinion, therefore, I should have no objection to subscribe, if fifteen hundred stadia would carry Nearchus to Susa; but that sum is still too small, and Susa⁵⁰⁵ must be the termination according to the text; otherwise I would have fixed the measure to the bridge where the fleet joined the army.

D'Anville's distance from Aginis to Susa is something short of an hundred and thirty miles, which Pliny states at two hundred and

⁵⁰⁴ Mr. Dalrymple is never accountable for the accuracy of the charts he publishes. The author is alone responsible; and in this case he

is anonymous.
⁵⁰⁵ Ἀγινίς . . . αὐτὴν δὲ ἀπὸ ἑξήκοντα σταδίων
ἰς Περσικὴν.

fifty ; this, by the usual reduction, is an hundred and twenty-five, agreeing sufficiently with some comparative measures of Al-Edrisi⁵⁰⁶, who has no direct route between these two points ; but Strabo has evidently copied the same authorities as Arrian, and his account is not only equally deficient, but his numbers more confused. He reckons an hundred and fifty stadia to the bridge, and from the bridge sixty to Susa. This is out of all proportion ; but it is immediately followed by an estimate of five hundred stadia from the Susian⁵⁰⁷ village to Susa, by which village, if he means Aginis, it is evident that he read five hundred in the copies as well as Arrian, and not fifteen hundred, as d'Anville requires. I have before me the means of giving the real distance within a very few miles, which I shall produce upon bringing the fleet up to the bridge ; and, to that distance, all the discordance of our authors must be obliged to submit. I shall now carry the fleet up the Karûn, which Arrian calls the Pasitigris⁵⁰⁸.

—
A VILLAGE
in the
Pasitigris.
February 10.
One hundred
and thirty-
second day.
—

One day only is allowed at Diridotis, though possibly it ought to be more, and one day at Aginis. From Aginis the fleet entered the Pasitigris, and proceeded little more than nine miles to a village, where Nearchus waited till he should receive intelligence that the army was approaching, which was to determine his progress, in order to effect a junction. The measures of the journal totally fail me here ; for the hundred and fifty stadia attributed to this day's course lead to nothing, and are fully as disproportionate as the five hundred assigned to the distance between Aginis and Susa. This is

⁵⁰⁶ He has one from Askar Mokram to Dorack of four stations, equal to about one hundred miles ; and, by comparison, this would give nearly the same measure as Pliny's and

d'Anville's to Aginis.

⁵⁰⁷ Lib. xvii. p. 729.

⁵⁰⁸ On leaving Aginis, his words are, 'Ενθὲν δὲ κατὰ τὸν Πασινίγριν ἀνω ἔσπελον, p. 357.

not more peculiar to my system than to Mr. d'Anville's; for if they entered the Haffar from the Tigris, as he supposes, the passage through that canal is thirty-five⁵⁰⁹ miles; and if they passed through the Delta, which is my supposition, the course is forty-five miles, instead of nine. I never abandon the measures of the journal without regret, as I find their general correspondence of the utmost utility; but I wish, upon the present occasion, to make the day's course terminate at the head of the Delta, where would be the natural position of the fleet while waiting for intelligence. In assuming the Karûn for the Pasitigris of Arrian, no error can be incurred but such as has already been discussed⁵¹⁰; and, in carrying the fleet up this channel, I adopt a course pursued by all the vessels of the country, till within these few years, which came from Bender-Regh, Busheer, or any of the ports on the eastern side of the gulph. Thevenot and Pietro della Vallé both passed this way; and though Thevenot describes the country of the Delta as almost depopulated, and little cultivated, the natural property of the soil must be fertile, as consisting of slime accumulated by the rivers; and this fertility must have been turned to advantage, and improved, while the government was good, as it evidently was, under the early dynasties. In this state Nearchus found it, and describes it as populous and flourishing; and the village they reached, as capable of supplying, not only their wants, but of administering to their gratification. One choice, therefore, only is left, to fix this village in the Delta on the banks of the Karûn, at nine miles from its

⁵⁰⁹ These measures are taken from Mr. Dalrymple's anonymous chart, and are both apparently too long.

⁵¹⁰ It has been suggested to me, that Nearchus might have sailed up the Bamishere Channel, instead of the Karûn. My objection to it is, that the Karûn branch has

been always navigated by the native vessels in preference to the others. It is only since European traders have gone to Basra, that the Cossifa-bony or Schat-el-Arab has been much used, the Bamishere, lying between the two, least of all.

mouth, if we adhere to the hundred and fifty stadia of the journal; or, if we abandon them, to carry the fleet through the whole level to the head of the Delta, at the point where the Karûn crosses the Haffar canal. The latter supposition seems preferable, on account of convenience; but there is nothing in the journal inconsistent with the former; for no distances are specified from this point upwards, as they are all concluded in the five hundred stadia from Aginis to Sufa, however erroneous that estimate may be.

At this village Nearchus performed sacrifices to the gods for the preservation of the fleet, and the success of his expedition. These were attended with games as usual; and the festivity natural to plenty and security succeeded to the fatigues of the voyage.

Having brought Nearchus to this village, I shall leave him in the enjoyment of his repose, till I have conducted the two armies under the command of Alexander and Hephæstion on their march to Susiana. The line of their progress is easily discernible; but, as there were no enemies to subdue, and the whole was the return of a victorious army, we have no geographical particulars from our classical historians; it is a bare outline, which, if necessary to be filled up, can only be effected by recourse to modern authorities: it shall, therefore, no longer be dwelt upon, than is necessary to combine the movements of the separate divisions, to establish dates, and to render the whole consistent in all its parts.

We left Alexander at Giroft in the latter end of December, preparing for his progress by an inland route eastward of the mountains, while he detached Hephæstion with the elephants and gross of the army, with orders to cross the mountains, and proceed along the coast of the gulph, through that level which is called the Kermesir. I ought not to know more than my director, and he says, that Hephæstion was ordered to take this route because it was
winter,

winter, and the winter was milder on the coast than inland. This is too true, for the mildness extends to heat, putridity, and unwholesomeness. It appears to me that Arrian has not preserved the real cause of this order, for Alexander seems to have acted upon this occasion, as upon all others, from the time he had no more enemies to subdue; that is, because he was desirous of obtaining a knowledge of his empire; and he detached Hephæstion through the Kermesir for the same reason he had ordered Craterus to proceed through Arachosia from the Indus, and Nearchus to survey the coast.

However this may be, Alexander himself appears to have moved from Giroft before the conclusion of the year, some days previous to the sailing of Nearchus, and the first place to which we trace him is Pasagardæ⁵¹¹; for at Pasagardæ is the tomb of Cyrus, whether he

⁵¹¹ A barren list of names will afford little information; but I subjoin the route from Giroft to Pasagardæ, extracted from Al-Edrisi, and shall continue it afterwards to Ragian. It has probably been the common road in all ages; for the principal places mentioned are of considerable antiquity, and existed in the age of Alexander.

		Miles.
KARMANIA.	From Giroft to Canat Alsciam,	20
	to Maaun*,	20
	to Valase-gerd,	20
	to Adhercan,	20
	to Giaraman,	20
	to Kescensian,	3
	to Rostack-Arrostack,	40—143
	to Zamm Al-modhi,	15
	to Darbe-gerd,	15
	to Seban,	3
PERSIA.	to Bercan,	12
	to Narecan,	12
	to Fasihān,	12
	to Tamsan,	18
	to Fasa or Pasa-gardæ,	12
		242

[N. B. The names in *Italics* alone are found in the modern maps.]

* Maaun is the town, *perhaps*, where Alexander received Nearchus; the Sal-Moun of Diodorus.

perished.

perished in the war with the Massagetæ, or was gathered to his fathers with the Euthanasia so beautifully described by Xenophon: and at Pasagardæ we find Alexander punishing Orsines for embezzlement, and plundering the tomb of a native sovereign. It is foreign to my purpose to enter into this transaction, still I cannot help noticing that the aspersions thrown upon the conduct of Alexander on this occasion by Q. Curtius are neither consistent with his character, nor countenanced by Strabo, Arrian, or any writer of estimation; but Q. Curtius debases the vices of the Conqueror with as little judgment as he extols his virtues. In both instances, it is the language of exaggeration without restraint, in which the author sacrifices truth, not to the love of falsehood, but to warmth of imagination and brilliancy of expression.

Pasagardæ⁵¹² is confounded with Persepolis by Arrian, upon Alexander's first visit to the province, when he burnt the palace in that city, of which, says Arrian, he now repented; and whether it was the effect of inebriated phrensy, revenge for the injuries of Greece, or the insolence of victory, any one of these inducements was sufficient cause of regret. Pasa, or Phasa-gardæ, was mistaken by many of the Greek writers, and the deception is natural; for the translation of Pharsa-gerd would regularly be Persepolis, and Pharsa-gerd differs from Phasa-gerd by a single letter. The former, however, signifies the city or capital of Phars; the latter a city, as Golius⁵¹³ informs us, cooled by the north-eastern gales.

On the present occasion, Arrian distinguishes this city from Persepolis; for we trace the progress of the army regularly from Pasagardæ to the capital; and it would be well if we had any characters to

⁵¹² Phasa still exists, and Golius makes it bad, Sapor, and Ardeshir. See d'Anville. the head of the district Darab, (so named But Niebuhr says this distinction is now from Darius,) one of the four into which the lost. province is divided; the other three are Ko-

⁵¹³ Gol. ad Alfrag. p. 114.

mark the route, but these will be searched for in vain: we learn only that Alexander was there, by the circumstance at his arrival of his constituting Peucestas satrap of the province, who had saved his life in India, and who was now so prudent a courtier as to assume the habit, and learn the language of the country. He had before been raised to the rank of Guard⁵¹⁴ of the Royal Person, and afterwards conducted to Babylon a body of twenty⁵¹⁵ thousand native troops, raised in his province, and armed in the Macedonian manner. This is a circumstance which develops the future designs of Alexander more than all the conjectures of his historians.

Persepolis, in its Greek form, evidently marks Pharsa-gerd as its Persian original; but the name was not preserved even in the middle ages, nor does any other name appear but Istakhr, or Estakhar, which declined into a village as Schiraz⁵¹⁶ rose into a capital, under the auspices of the Mahometan conquerors. The name of Estakhar itself seems now almost to have perished, for there is not even a village⁵¹⁷ at the ruins, now called Chel-minar or the Forty Pillars, or at Naxi-Rustam in the neighbourhood, both which bespeak the magnificence of the ancient capital, and the workmanship of that age⁵¹⁸, which is discoverable in the Egyptian ruins. The consequence is, that Al-Edrisi has no route to Estakhar, but to Schiraz⁵¹⁹

⁵¹⁴ The Σωματοφύλακες, or *body-guard*, were originally only seven: Leonnatus, Hephæstion, Lyfimachus, Aristonous of Pella, Perdicas of Orestis, Ptolemy and Python of Eordæa. To these Peucestas was added when Alexander was in Karmania. Arr. lib. vi. p. 269.

⁵¹⁵ Others say thirty thousand.

⁵¹⁶ Written Zjiraes, Xiras, Dsjiraus, Chiraz, &c. founded anno 336 of the Hejra. Gol. p. 116.

⁵¹⁷ Niebuhr resided at a village in the neighbourhood.

⁵¹⁸ The building of Persepolis is imputed to Caiumaras, the first name in Persian mythology. The ruins of Chel-minar are given in Le Bruyn, Niebuhr, &c. &c.

⁵¹⁹ Route from Phasa to Schiras. Al-Edrisi, p. 127:

	Miles.
From Phasa to Kar,	15
to Rebat,	12
to Haramim,	12
to Schiraz,	21

—
60

only,

only, and Estakhar lies thirty-six miles⁵²⁰ south-east of Schiraz. The route, therefore, which I insert serves only to shew a comparative distance, and the difference between Schiraz and Estakhar is just so much out of the direct modern road.

From Persepolis nothing intermediate appears till the arrival of the army at Susa, except the junction of the fleet at the Pasitigris; the route, however, is evidently the same as the modern one, which enters Susiana at the bridge on the Tab or Arofis, called Baccar, within a small distance⁵²¹ from Ragian. At Ragian a variety of routes terminate which come on the one hand through Persis, and on the other through Susiana; for here seems to be the point where the Tab will first admit of a bridge, and consequently it is the centre of communication between the two provinces. Hither we may bring Hephæstion, who came along the coast; and by this road Parmenio⁵²² must have entered Persis from Susiana, when Alexander passed higher north, upon his original invasion of the province.

Let us then suppose Alexander on his progress from Persepolis to Ragian, his march cannot lie out of the route which I have given from Schiraz⁵²³; and at Ragian let his army halt, till I have brought up Hephæstion to a junction.

If it were necessary to trace the whole progress of this division from the time it left the army in Karmania, there are routes by

⁵²⁰ Golius ad Alfrag. p. 116. D'Anville gives the same distance, but makes it north-east.

⁵²¹ See Al-Edrisi, p. 126. He says a bow-shot.

⁵²² Arrian, lib. iii. p. 130. κατὰ τὴν ἀμα-
ζιτὸν τὴν εἰς Πέρσας φέγουσαν.

⁵²³ Route from Schiraz to Ragian. Al-Edrisi, p. 126:

	Miles.
From Schiraz to Giouan,	15
to Chalan,	12
to Charrara,	15
to Korchemam,	15
to Horaidan,	12
to Rafain,	22
to Ragian,	21—112

which

which it is not impossible to mark the greatest part of its general direction; and if the work of Beton and Diognetus were extant, it would be no little gratification to compare it with our modern journals: but, as the matter stands, I have little more than a barren list of names to present, without interest or information, and therefore refer it to the margin. Pietro della Vallé⁵²⁴ travelled from Mina to Lar, but labouring under illness, and in a litter; and Le Bruyn⁵²⁴ has a route from Gomeroon to Lar. From Lar, the route to Giouar falls into a journal⁵²⁵ of Al-Edrifi's, probably at Mai.

Passing

⁵²⁴ Route from Mina to Lar. Pietro della Vallé, vol. v. p. 418:

From Mina to Ciuciululion,
to Iffin,
to Kufciar, perhaps* Rudsciour,
to Kaharistan,
to Guri-bizirgon,
to Tengi-dalan,
to Khormud,
to Boadini, a Caravanferai,
to Basili,
to Lar,

⁵²⁴ Route from Gomeroon to Lar. Le Bruyn, vol. ii. p. 70:

Gomeroon†.
Bandalie.
Gesje.
Koreston.
Goer-baser-goer.
Tang-boe-dalon.
Gormoet.
A Caravanferai.
Basiele.
Lar.

The route from Mina and that from Gomeroon join at Kaharistan, which Le Bruyn writes Koreston, and from thence to Lar, the names, however disfigured, are the same. This course consequently continued unchanged from 1620 to 1693. In Al-Edrifi, p. 131. we can only discover that the route went to Sciura, that is, Rud-sciour, the salt river of Pietro della Vallé, the Karius or Korius of Ptolemy, the Salsos of Pliny.

⁵²⁵ Route from Siraf to Giouar, or Firuz-abad. Al-Edrifi, p. 125:

(Siraf is near Keish, and the mart of the gulph formerly.)

	Miles.
From Siraf to Borcana,	21
to Adhercan,	} 12
or Ras-Al-acbe,	
to May,	18
to Kabrend,	18
to Chan-Arademerda,	18
to Giar,	18
to Daft-Surab,	9
to Giouar,	15—129

* Because he mentions a salt river here.

† Tavernier, lib. v. p. 747. &c. has the same route as Le Bruyn, and with equal variation in the orthography.

Passing from hence to Giouar, in the road to Schiraz. From Giouar there are two routes to the Tab, or Arofs; one along the coast noticed by Al-Edrifi, through Gennaba⁵²⁶, and another inland, as I conceive, by Kaferon. It is apparently the latter that was pursued by Hephæstion; for at Sitakus, where the fleet lay for one-and-twenty days, we have intelligence that this army was not very near the coast, and there can be no reason for its approach towards the sea afterwards. I find no route from Kaferon to Ragian, but a view of the map will shew, that it must soon fall in with the road from Schiraz to that town, which has in all ages been the direct communication between Persepolis and Susa, as it is at this day between Schiraz and Toftar, if it exists; and, from the bridge at Ragian to Susa or Toftar, it is short of an hundred and forty miles. I give this whole account subject to the correction of any traveller,

The route from Lar to Giouar ought to fall into this at Adhercan, or Ras-Al-acbe, which are the same; for Ras-Al-acbe signifies the top or passage of the mountains. These mountains are the chain, which I suppose to run inland from Dâhr Alban, and to produce both the Nabon and Darabin rivers.

⁵²⁶ Route from Giouar to Giannaba. Al-Edrifi, p. 125:

	Miles.
From Giouar to Kazeron (<i>Kazarun</i>),	48
to Rosaic, -	12
to <i>Tauag</i> , -	24
to <i>Giannaba</i> , -	36
	120
From Giannaba* to Ragian by estimation,	38
	158

The road inland, from Giouar to Ragian, may be thirty miles shorter, or about 130

miles upon the whole; so that the march of Hephæstion from Mina to Ragian would be,

	Miles.
by estimation, to Lar, -	145
to Giouar, -	129
to Ragian, -	130
	404

And as he took the interior circle along the coast, this bears a due proportion to the march of Alexander. Whether these extracts are worth the trouble, I cannot say; they come out in proportion, but are not entirely to be depended on; for I cannot discover Al-Edrifi's mile. I have tried it by several known distances, but it exceeds sometimes, and sometimes falls short. I once saw an estimate of this mile in Mr. Howe's papers, communicated to me by the Bishop of Rochester, but could not find it upon a second reference to them.

* Giannaba is the Gennaba of d'Anville, the Gunowah of M^cCluer.

who is acquainted with the actual state of the country at the present hour, having no living authority to consult; and I am sufficiently persuaded, without correction, that the desolation of these provinces has removed the land-marks which the ancient or early writers have enabled me to point out. With due allowance for this natural obscurity, I submit the whole to the judgment of the reader, and shall conduct the army, once more united, to the Pasitigris, and to a bridge on that river where Nearchus is to conclude his expedition.

The Pasitigris is evidently a river which the army passed before it could reach Susa: this appears, by something more than conjecture, to be the Kouroucan-Kendé of Timour, the second stream east of the Eulæus. And if the Kopratas of Strabo and Diodorus answers to the Dou-danké of Timour, as I conclude, that stream joins the Pasitigris previous to the junction of the Pasitigris with the Eulæus. This will afford the means of ascertaining the position of the bridge, if ever the interior geography of Susiana shall be obtained; but there is a still more correct method of arriving at the same end, which is by drawing a line from Ragian to Susa, and fixing the bridge where this line intersects the Pasitigris; in this, there can hardly be an error of more than a few miles either way, and this is the position I shall assume. There is no route in Al-Edrisi from Ragian to Toftar, but d'Anville makes the distance about an hundred and forty-five geographical miles, and this, from other comparative measures³²⁷ in the province, is apparently

³²⁷ Diodorus, lib. xix. p. 334. says, it is twenty-four days' march from the Pasitigris to Persepolis. This seems too long, unless he means that the army of Eumenes were so many days in performing it.

The distance is, from the Pasitigris	
to Ragian,	100 miles,
to Schiraz,	112
to Persepolis,	36—248

parently just. From this sum, if we deduct forty or fifty miles, to give the distance from the bridge to the capital, we obtain a geographical reduction as nearly the truth as our information will enable us to hope.

I shall next consider the whole distance from Giroft to Susa, which stands thus :

		<i>Miles Geog.</i>
From Giroft to Phafa,	- -	242
From Phafa to Schiraz,	- -	60
From Schiraz to Ragian,	- -	112
		414
Allowed distance from Ragian to Susa,	- -	145
		559

In the same space, d'Anville allows eight degrees, or four hundred and eighty miles, which, with a seventh added for road distance, makes a total of near five hundred and forty-nine miles, a difference not worth regarding; but it ought to be remarked, that Alexander departed from this route, by going to Persepolis, which adds fifty or sixty miles to the sum. This we compensate, however, by taking the measure, not to the Pasitigris, but to Susa; so that if we fix the total at five hundred and sixty geographical miles, equal to six hundred and fifty-four miles English, there can be no error of importance.

Let us now refer to the dates. If the army moved from Giroft on the twenty-fifth of December, as I have proved it might have done, and Nearchus arrived at the village on the Pasitigris the 10th of February, the interval is forty-seven⁵²⁸ days; and then the num-

Eumenes moved, therefore, at the rate of summer, and the heats intolerable.
little more than ten miles a-day; but Dio-
dorus mentions that it was in the height of

⁵²⁸ Forty-eight inclusive.

ber of miles, divided by the number of the days, gives nearly fourteen miles a-day for the march of the army. This rate is evidently too high⁵²⁹, because it makes no allowance for the time Alexander staid at Phasa-gardæ and Persopolis, where he had business to transact, or for the necessary halts of the army; but we are to consider that Nearchus staid at the village till he heard of the approach of the troops, and, therefore, any interval that will coincide with their arrival may be assigned to his delay. Fourteen days will answer every purpose that is requisite; and if we bring Alexander to the bridge on the Pasitigris upon the twenty-fourth of February, we have at least a consistent date, if not the true one; and as no real day is assigned in any author⁵³⁰ that is now extant, this is the only kind of precision that can be expected.

This bridge on the Pasitigris is described as a bridge of boats, which had been thrown over the river for the accommodation of the troops; but as bridges of this kind are the ordinary means of communication throughout the empire, and the route was by the common road from Persis, it is reasonable to suppose that there was always a bridge nearly in the same place. Neither ought I to omit a circumstance accidentally preserved in Diodorus, which at the same time indicates the necessity of a bridge, and the possibility of navigating the Pasitigris: for this river, he informs us, was from three⁵³¹ to four stadia broad, and its depth correspondent.

⁵²⁹ A Macedonian army, upon occasion, marched from twenty to twenty-five miles a-day; but the marches of the ten thousand reduced, amount to thirteen or fourteen miles; and this is a fair estimation for the march of a Macedonian army, when no particular object was in view. Alexander was twenty days in marching from Babylon to Susa, three hundred miles; forty days consequently give six

hundred miles; but he then moved to seize the treasure: he had now no particular object in view.

⁵³⁰ Pliny says seven months.

⁵³¹ According to the stadia of Arrian, one-fourth of a mile. See *supra*, p. 415. Where I have said the breadth was 400 feet; perhaps Diodorus assigns this breadth to the Kopratas. See p. 331. compared with p. 330. and p. 211.

To this bridge I conduct Alexander; and hither, upon hearing of his approach, Nearchus proceeded from the village, up the stream, to join him. No space of time is allotted by the journal for this navigation; but as the passage could not be less than from an hundred to an hundred and twenty miles, it would scarcely require less than three days, and possibly more, notwithstanding they might have the advantage of the tide at the commencement of their progress. The fleet seems to have reached its destination before⁵³² the army; but no sooner did Alexander arrive, than he embraced Nearchus with the affection of a friend, and the acknowledgments of a sovereign. One object of his ambition was to conquer difficulties unattempted by others, and one aim of his policy was to obtain a knowledge of his empire; both these purposes were effected by the accomplishment of this expedition; his satisfaction was complete. The reception of Nearchus among his countrymen was as honourable as that which he experienced from the king; wherever he appeared in the camp, he was saluted with acclamations; while gratitude and admiration united in weaving the wreath and the chaplet to crown him for his success. Sacrifices, games, and universal festivity, closed the scene of this happy union. Thus have I conducted the several divisions of the forces and the fleet from Nicæa on the Indus, to the termination of their labours in Susiana; and I conclude the expedition on the twenty-fourth of February, in the year three hundred and twenty-five before the Christian æra.

The time employed in accomplishing this voyage from the mouth of the Indus is an hundred and forty-six days, or somewhat short

⁵³² Πρὸς τῇ χειρὶ ὁρμίζονται ἐφ' ἧ τὸ γράτευμα διαβιβάσιν ΕΜΕΛΑΕΝ Ἀλέξανδρος; ἐς Σῶσα. Arr. p. 358.

of five⁵³³ months, which Pliny has extended to seven⁵³⁴, and in which he is neither consistent with the departure from Nicæa, or from the mouth of the Indus. A modern vessel, it is true, may perform the same course in three weeks which employed Nearchus twenty-one; but we are not for that reason to undervalue the merit of the first attempt. Within the memory of man, a voyage to India required eight or nine months; but Dr. Robertson⁵³⁵ mentions, that, in the year one thousand seven hundred and eighty-eight, the Boddam East Indiaman reached Madras in an hundred and eight days, and it has since been performed in ninety-six.

Here the narrative ought to close; but I trust the reader will have no objection to accompany Nearchus to Susa, where he is to receive the reward of his labours. To Susa, after crossing the Pasitigris, Alexander proceeded with all his forces, and in that capital, where the principal treasure of the empire was deposited, he prepared to distribute that remuneration which had been earned by the faithful services of his army, and those honours which are due to merits of distinction.

The first instance of his liberality was exhibited in discharging⁵³⁶ the debts of the army, which are estimated, not perhaps without exaggeration, at twenty thousand talents, equal to three millions eight hundred and seventy-five thousand pounds sterling; an enormous sum! But if we suppose the Macedonians alone to partake of this favour, and estimate them at forty thousand⁵³⁷, it amounts to

⁵³³ Five *lunar* months and six days.

⁵³⁴ Lib. vi. p. 136.

⁵³⁵ Disquis. Ind. p. 207.

⁵³⁶ Diodorus places this transaction at the time of dismissing the veterans, mentions their debts only, and estimates them at ten thousand talents. Vol. ii. p. 246.

⁵³⁷ Notwithstanding the reduction by war, infirmity, and the march through Gedrosia, it may be calculated from the reinforcements which had joined, and the services of the army immediately upon the death of Alexander, that the number was greater rather than less.

less than an hundred⁵³⁸ pounds a man: we must observe moreover, that the debts of the officers were included in this estimate, and the excess of their proportion must subtract from the quota of the private soldier. Many of them had lived with the luxury of Oriental⁵³⁹ satraps, and possibly Antigenes was not the only one who gave in his debts above their real amount. If, therefore, proper deduction be made on these several accounts, the proportion to the individual will not appear so extravagant as the gross sum.

A second scene of magnificence was presented upon the marriage of Alexander, and that of his principal officers, who were induced by his example, or influenced by his favour, to receive the daughters of the noblest Persian families at his hands. Alexander himself had before married Roxana, the daughter of Oxyartes, satrap of Bactria; and he now gave his hand to Barsine⁵⁴⁰, the daughter of Darius; to whom Aristobulus adds a third, who was Parysatis, the daughter of Ochus. Eighty marriages of this sort were celebrated in the same nuptial feast; and among the number was that of Nearchus, with the daughter of Mentor and Barsine. The king bore the whole expence of the solemnity, and furnished the marriage portion⁵⁴¹ for every bride.

Next succeeded the distribution of honours, and the reward of services. All the officers, who had obtained the rank of Guards of the Royal Person, received crowns of gold, including Leonatus for his victory over the Oritæ, and Peucestas for his service in preserving the life of his sovereign. In this honour Nearchus alone⁵⁴² partook as admiral, and Onesicritus as the navigator of

⁵³⁸ Ninety-seven pounds, all but a fraction.

⁵³⁹ See Athenæus, lib. xii. p. 539.

⁵⁴⁰ Statira.

⁵⁴¹ Περσικὰς. 10,500 talents. Athenæus.

⁵⁴² At least no others are mentioned by name.

the fleet. Nearchus was likewise continued in his command, and destined to a future service of greater importance than the voyage he had already performed, that is, the circumnavigation of Arabia to the Red Sea. This was intended as the completion of the great design that Alexander had conceived of opening the communication between India and Egypt, and by means of Egypt with Europe: of this commerce, Alexandria was to be the center. Such, by the natural course of events, it afterwards became, and such it continued for eighteen centuries; but this plan was defeated by the unexpected death of the monarch; and the fate of Nearchus in the ensuing struggle for empire is no farther discoverable, than that he was made governor of Lycia⁵⁴³ and Pamphylia⁵⁴⁴, and that he attached himself to the fortunes of Antigonus. We find him with that general crossing the mountains of Louristan⁵⁴⁵, out of Susiana, after his contest with Eumenes, and two years afterwards as one of the advisers⁵⁴⁶ Antigonus had given to his son Demetrius, whom he left in Syria. I have looked for the conclusion of his life in vain⁵⁴⁷; but this event possibly took place at the battle of Ipsus,

⁵⁴³ The first mention of Nearchus, as governor of Lycia and Pamphylia, occurs in Justin. This, however, does not greatly interfere with the divisions of the empire given in Photius, p. 230; for both these provinces are assigned to Antigonus; and Nearchus, as being high in his favour and confidence, was probably appointed by him to these provinces. It is remarkable, that in Photius's extract from the ten books of Arrian, (*τὰ μετὰ Ἀλέξανδρον*), concerning the transactions after the death of Alexander, the name of Nearchus is not once mentioned.

⁵⁴⁴ Justin, lib. xiii. cap. 4. Orosius,

lib. iii. c. ult. See Q. Curtius, Snakenborek: *Divisio Imperii*.

⁵⁴⁵ Diodor. lib. xix. p. 333.

⁵⁴⁶ Diodor. lib. xix. p. 372. ed. Wef.

⁵⁴⁷ I dare not pronounce that nothing is to be found relating to Nearchus after the battle of Ipsus, but I have searched Diodorus, Plutarch, Arrian in the extracts of Photius, Justin, Q. Curtius, and the indefatigable commentators of that author, Freinshem and Snakenborek, without success. Neither have I found any anecdotes relating to his life previous to the expedition, except what the Baron de Sante Croix has anticipated, Exam. p. 250.

Ipfus, where Antigonus fell; or, after the battle⁵⁴⁸, by the command of the four kings who obtained the victory. In whatever manner he closed the scene of life, and by whatever means he was prevented from completing his voyage into the Red Sea, that part of it which he had performed must be the monument of his glory.

His best encomium is comprised by his historian in a single sentence. Thus was the fleet of Alexander conducted in SAFETY from the Indus to its destination.

ΟΥΤΩ ΜΕΝ ΑΠΕΣΩΘΗ ΑΛΕΞΑΝΔΡΩ, ΕΚ ΤΟΥ ΙΝΔΟΥ ΤΩΝ ΕΚΒΟΛΕΩΝ ΟΡΜΗΘΕΙΣ Ο ΣΤΡΑΤΟΣ.

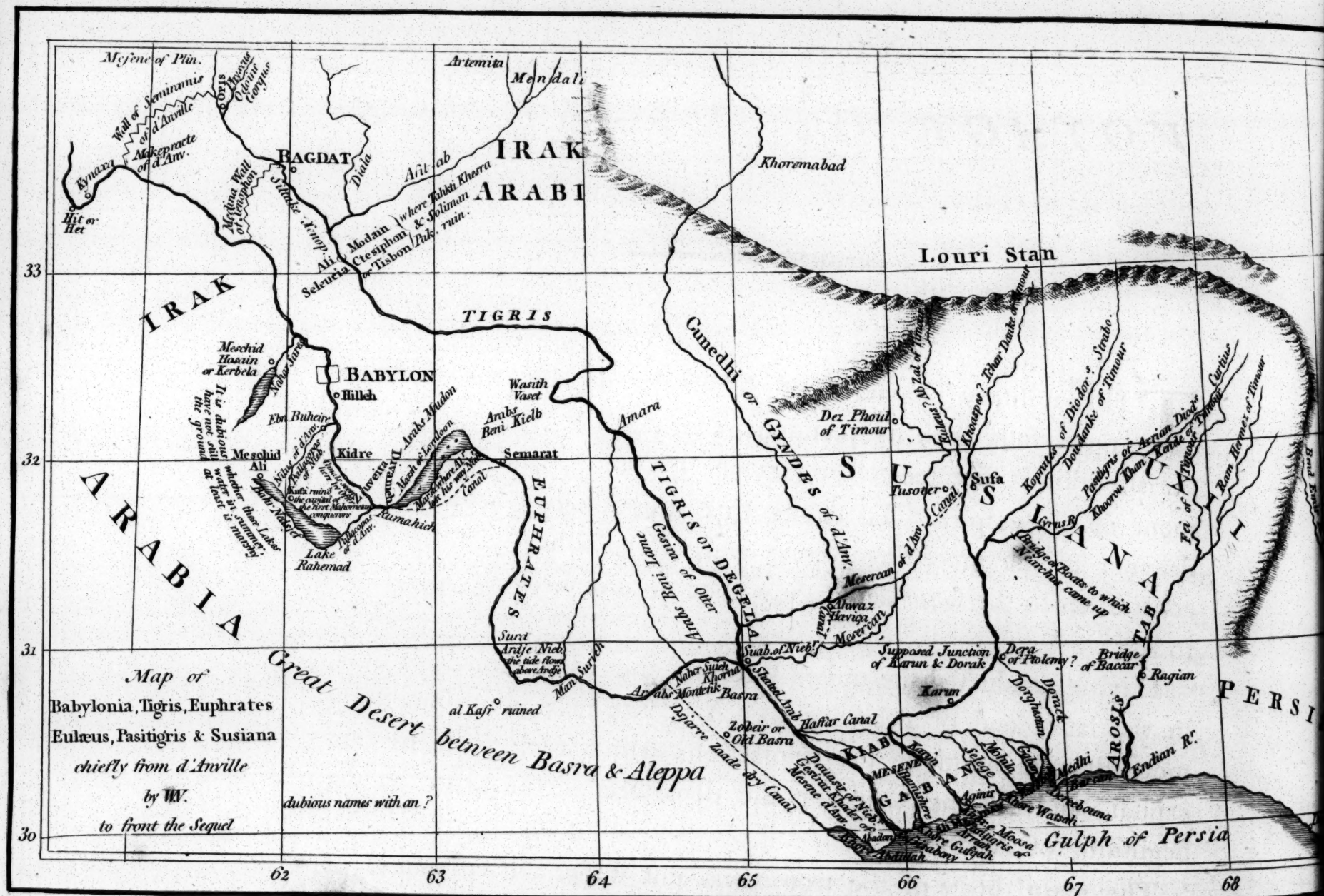
by which it appears, that he was a native of Crete, and enrolled a citizen of Amphipolis, as we may conclude, at the time when Philip, having taken that city from the Athenians, was collecting inhabitants, in order to establish it as the mart of his new conquests in Thrace. He did not continue at Amphipolis; but came up to the court of Philip; and had so ingratiated himself with Alexander, that in the family dissensions which arose upon the secession of Olympias, and some secret transactions of her son in regard to a marriage with

the daughter of Pexodorus, satrap of Caria, Philip banished Nearchus, with others whom he supposed too much attached to the interests of Alexander. Upon the death of Philip he was recalled, and his sufferings in the cause naturally secured the affections of his sovereign. See Plutarch in Vita Alex. p. 669. edit. Franckfort, 1599.

⁵⁴⁸ This battle ought to have been found in the 21st book of Diodorus, but the extract only is extant.

SEQUEL





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S E Q U E L

TO THE

VOYAGE OF NEARCHUS.

THE military character of Alexander dazzles the mind so powerfully with its splendour, that it is not without an effort the attention is directed to the plans of his policy, and the arrangement of his empire. To excite this attention has been the endeavour of the preceding pages; and, if the subsequent narrative contributes to the same design, it will be no uninteresting appendage to the work.

Having conducted the united forces of the Macedonians to Susa, in the latter end of February 625 A. C. we may allot something more than a month to the transactions which took place in that capital, and fix the time for the departure of the army at the beginning of April.

The main¹ body of the troops was put under the command of Hephæstion, with orders to proceed towards² the Tigris; but

¹ Arrian, lib. vii. p. 281.

it will immediately appear that Alexander met

² Arrian says, to the Gulph of Persia; but

them again on the Tigris.

Alexander himself determined to take a view of the Gulph of Persia; and, for that purpose, embarked on board the fleet with the Hypaspists³, the first⁴ troop of horse, and a small body of the Companions⁵. He embarked, says Arrian, on the Eulæus; and, if this be true, the fleet must have been brought down the Pasitigris to the junction of that river with the Eulæus, or even from that junction up the Eulæus, to Susa. This supposition is not contradictory to any thing which appears in Arrian; and, if it is allowed, solves the objection arising from calling the same river by two names; for Alexander undoubtedly fell down the same stream which Nearchus had navigated upwards from the sea. The annexed map will render this more perspicuous than any explanation which can be added, but the cause of variation in the names requires some notice.

It has been observed already, that Nearchus entered that channel which he calls the Pasi [or eastern] Tigris: this, at its issue, is styled the Khore Moofa, (the Mosæus of Ptolemy,) and above the Delta, Karûn: but Nearchus, having entered the Pasitigris, carries that name up with him, through the Karûn, to the confluence of two streams inland; one of which, leading on the west to Susa, is the Eulæus, and the other on the east, preserves its title to Pasitigris⁶. Nearchus navigated this eastern branch up to the bridge; and Arrian, copying Nearchus only in the journal, of necessity uses the same appellation as the authority he follows.

³ N. B. The Hypaspists alone are three foot heavy-armed.

thousand. Arrian apud Photium, p. 610.

Diod. lib. xviii. and xix. p. 339.; but the Argaspidæ are mentioned separately.

The Hypaspists are Macedonian infantry, well as Arrian.
in contradistinction to the Greek Hoplitæ,

⁴ τὸ ἄγρυμα.

⁵ Companions. ἑτάροι. Macedonian horse.

⁶ In Strabo, Diodorus, and Q. Curtius, as

But

But upon the embarkation of the troops the case is changed, for here he follows Ptolemy and Aristobulus; and Ptolemy, who was by office about the person⁷ of the king, was almost necessarily a partaker in the expedition. Ptolemy, therefore, embarked at Susa, if the fleet came up to the capital, or, if it came no higher than the confluence, he marched down by the Eulæus, with the troops which were to embark there, and naturally called that stream the Eulæus, the course of which he had followed from the city. This brief recapitulation explains the reason of attributing two names to the same river, and reconciles two passages of Arrian which at first sight appear not a little discordant. I shall only add, that, in the *History*⁸, the name of the Eulæus being once admitted, never varies; and in the *Journal*, the Pasitigris being adopted, there is no mention of the Eulæus.

Down this stream, the fleet descended to the head of the Delta; and here, where the Haffar⁹ canal comes in from the Tigris, a new arrangement was made; the vessels which had suffered most in the voyage, were ordered to proceed, with the troops they had on board, through that cut into the Tigris; and it is remarkable that Arrian mentions it expressly, not as a natural stream, but an artificial¹⁰ canal. What can precision require more? It is not my intention in this Sequel to dwell minutely upon particulars; but I cannot help noticing that this is still the usual passage¹¹ for the country vessels,

⁷ Σωματοφύλαξ.

⁸ Lib. vii. p. 281.

⁹ D'Anville conjectures Haffar may be the Aphlé of Pliny. May they not both be the Ampé of Herod. lib. vi. p. 447. edit. Wef.; for the situation of Herodotus's Ampé, at the mouth of the Tigris, is more precise than Pliny's Aphlé?

¹⁰ αἱ δὲ ἄλλαι αὐτῶν νῆες ἀναχωροῦσιν κατὰ τὸν Εὐλάϊον εἰς τὴν ΔΙΩΡΥΧΑ ἢ ΤΕΤΜΗΤΑΙ ἐκ τῆς Τίγρητος εἰς τὸν Εὐλάϊον, καὶ τῇ διχομοιῇ θύσαν εἰς τὸν Τίγρητα.

The modern expression is equivalent. Kallael-Haffar; the Haffar cut.

¹¹ Thevenot and P. della Vallé went up it. The Khore Bamihere has been since navigated.

and

and that we find the eastern entrance of it guarded by a fort, with two others at its issue into the Tigris. The lower one of these is in the Delta, and that part of the Delta called the Mefene, on the site of which we ought to look for the Spasini Charax, as the most convenient spot: but if it cannot be found there, it is possibly still discoverable¹², for it was a mound of earth collected from the neighbourhood, which, upon a level like the Muçan, is perhaps visible to the present hour. Tumuli of this kind are more eternal than walls of stone.

Alexander, after dispatching the greater part of his fleet by this passage, proceeded with the lightest and best sailing vessels apparently by the Karûn branch, or Khore Moosa, through the Delta to the sea. From this khore, his passage to the Tigris [Schat-el-Arab] would naturally be across the Ali-Meidân, for this shoal would be no obstacle to vessels like those in which he had embarked. But of this passage we have no other account, except the mention of the intervening space which Nearchus had navigated twice before. The separate narrative, in fact, is so brief, that it employs only four lines to conduct him into the Tigris, to convey him up to the camp of Hephæstion, and from the camp to Opis, where the expedition closes.

Concerning the navigation of the Tigris little can be added from modern information; the passage between Basra and Bagdat, we learn from Hackluit, requires forty-four¹³ days against the stream, with fourteen men to draw the boat; and, from Bagdat downwards, may be performed in nine, eighteen, or twenty-eight days, accord-

¹² What perpetual inundation may have done is not to be calculated; otherwise, if this site were searched for, it would indubitably be found.

¹³ Hackluit, vol. ii. p. 251. 270. Sometimes sixty days, as Tavernier and P. della Vallé assert.

ing to the state of the river. Otter¹⁴, who performed this voyage himself, has few materials to supply; he embarked in June¹⁵, when the river ought to be full; and he mentions little, but that he found no cultivation between Bagdat and Al-Modain, and that he saw at Amara the mountains which bound Susiana on the north, beginning to rise at some distance on his left. He notices besides a canal from Amara to the Euphrates, which forms a Dgesiré, or island, inhabited by the Arabs Beni Lamé. To this barren account Colonel Campbell¹⁶ adds, that the river itself is grand, but the country furnishes scarcely an object for reflection. "I do not remember (he says) to have ever passed through such a vast extent of country, so uniformly dull and uninteresting, or to have spent eight or ten days with so little to give birth to a new idea".

Alexander, at the season he navigated this stream, probably employed as many days as are now requisite; so that he could hardly reach Opis, which is above Bagdat, till the middle of June, more especially as he had the dykes to remove, with which the Persian monarchs had obstructed the stream. His historians delight in attributing these obstructions to the timidity of the Persians, and the removal of them to the magnanimity of the Conqueror; but Niebuhr¹⁸, who found similar dykes¹⁹ both in the Euphrates and Tigris still

¹⁴ Tom. ii. p. 39. et seq.

¹⁵ June 10th, at Bagdat. June 14th, at Amara. June 17th, at Khorna. June 18th, at Basra. Nine days, agreeable to Hackluit.

¹⁶ Journey of Donald Campbell, Esq. 1795. Part iii. p. 10.

¹⁷ He notices the heat as intolerable.

¹⁸ This is mentioned at Lemloun, on the Euphrates; at Higré, Hogkne, and Eski

Mosul, on the Tigris. Niebuhr, vol. ii.

p. 307. Edit. Amst. Travels. He supposes the mound at Higré to be in the very place of that demolished by Alexander.

¹⁹ Tavernier mentions one of these dykes one hundred and twenty feet high in the fall, between Mosul and the great Zab. Vol. i. p. 227.

existing,

existing, observes, that they are constructed for the purpose of keeping up the waters to inundate the contiguous level; if so, the demolition is as derogatory from the policy and sagacity of the monarch, as it is flattering to his intrepidity.

Opis was the principal city on the Tigris, in the age of Xenophon and Alexander; it rose probably on the decline of Ninive, and the other Assyrian cities after the Persian conquest, most of which Xenophon found in a state of decay and desolation; but the situation of Opis²⁰ is much doubted by geographers. There is no apparent reason indeed why the position assigned to it by d'Anville should not be admitted; but having examined the question for my own satisfaction, I have subjoined the result of my inquiries for such readers as may find a pleasure in geographical discussion.

After conducting Alexander to Opis about the middle of June, the military transactions which succeeded are foreign to the purpose of the present work. It will be sufficient barely to mention the mutiny of the army which took place at this city, and the discharge of the veteran soldiers, who were sent home under the command of Craterus. The latter end of the summer was employed in an excursion into Media; and at Ecbatana, the capital of that province, the death of Hephæstion was the principal circumstance which occurred. Paroxysms of grief occupied the Conqueror during the autumn; in the indulgence of which, like another Achilles, he dishonoured himself, while he intended to honour the memory of his Patroclus. Upon the commencement of winter, he is said to have resumed his arms in order to sooth his sorrow; and the con-

²⁰ In hoc Chaldæorum tractu fuit Opis, emporium ad Tigrim, sed incertum quo loco et ordine respectu oppidorum a Ptolemæo memoratorum. Cellarius, vol. ii. p. 462.

quest of the Kossæi was completed in forty days. They are the same tribe still called Kouz²¹, or Coffes, inhabiting the mountains of Louristan; and, by the invasion of them from the north, ought to be on the northern²² face of that range which incloses Sufiana. Upon the conclusion of this expedition, Alexander returned towards Mesopotamia, with an intention of proceeding to Babylon; and, upon this march, we are again informed of a renewed attention to his marine: for Heraclides was now sent into Hyrcania [Mazanderan], with orders to cut timber and prepare a fleet of vessels built after the Grecian manner, for the purpose of exploring the Caspian²³ Sea. It seems extraordinary, that in the age of Alexander it was still doubted whether this sea was a vast lake, or communicated with the Northern Ocean; but the information of Herodotus, as it appears, had not been sufficient to convince the Greeks of its real state. The solution of this doubt was a sufficient motive to influence the conduct of Alexander; and the desire of obtaining a knowledge of his own empire, or the situation of the nations on his confines, had always been an inducement to the boldest of his undertakings.

After crossing the Tigris, he proceeded to Babylon²⁴, and entered the city much against²⁵ the inclination of the priests of Belus.

²¹ Plutarch writes this name Κουσαῖοι, Kussæi; and hence Kiffii. Alexander, p. 704.

²² As the Uxii are on the southern. ὄρος ἀπορροῦ τῆς Οὐξίας. Arr. lib. vii. p. 294.

²³ It is remarkable that Nadir Shah was building a fleet on the Caspian, and forming one on the Gulph of Persia, a few months before his death, as well as Alexander. The transporting of timber and vessels into the provinces which were not supplied with either

is likewise noticed by Hanway, Otter, and Sir William Jones, &c.

²⁴ Babylon is four German miles from Hilleh. Niebuhr, p. 235. The Euphrates, at Hilleh, is four hundred yards wide, with a bridge of thirty-two boats, p. 234.

²⁵ Omens occur as usual, and Nearchus is mentioned by Plutarch as the officer who came out to meet the king, and forewarn him of his danger.

They had embezzled the revenues allotted for the restoration of the temple²⁶ demolished by Xerxes, and wished to avoid the day of account. The situation of Babylon is too well known to require much disquisition on the subject: it stood twenty miles above the modern Hilleh, the town where all travellers land who come up the Euphrates from Basra, and whence they have a journey of only three or four days²⁷ across Mesopotamia to Bagdat. The remains of this capital are not so obliterated as some travellers would make us believe; they are, however, mountains of rubbish²⁸ rather than ruins, with caverns and hollow ground extending over a space of fifteen or sixteen miles; while there is hardly a town, a village, or a building within many leagues of its neighbourhood, which does not exhibit the bricks plundered²⁹ from this once magnificent metropolis of the East.

At Babylon, Alexander found part of his fleet, which had proceeded up the Euphrates while he was conducting the other part

²⁶ It was not the temple or tomb of Belus, according to Strabo, but a pyramid of brick, a stadium in height, and a stadium square at its base. Ten thousand men were employed for two months, but the death of the king put a stop to the progress of the work. Lib. xvi. p. 738.

²⁷ It is little more than fifty miles. Ives.

The boat which carries dispatches is only ten days between Basra and Hilleh. The ordinary passage about twenty-one days. Niebuhr. Voyage, vol. ii. p. 197. et seq. The tide serves to Ardsje, seventy miles above Khorna, p. 198. i. e. fourteen German miles.

²⁸ Niebuhr trod the ground of Babylon almost without knowing it; he mentions hollow tumuli for three or four miles, and some trees still growing there not natives of Baby-

lonia; vol. ii. p. 235, 236. Hilleh is in lat. $32^{\circ} 28' 30''$. Babylon near twenty miles to the north. See P. della Vallée, tom. ii. p. 250. Hilleh is fifty miles from Bagdat by common estimation, but I find it by a combination of routes fifty-five, in the late Mr. Howe's papers, communicated to me by the Bishop of Rochester.

²⁹ A Caravanferai at Hilleh was built within these few years with bricks from Babylon, about the thickness of our's, but a foot square, and very well baked. Niebuhr, p. 235. The reason why there are so few remains of Babylon, is, that the ordinary buildings consisted of bricks baked in the sun. The bricks of the walls and public buildings have been conveyed to other towns.

up the Tigris; and, by the language of Arrian, it should appear that Nearchus³⁰ had taken charge of this division. Hither also had been brought from Phœnicia seven-and-forty vessels, which had been taken to pieces, and so conveyed overland to Thapsacus. Two of these were of five banks, three of four, twelve of three, and thirty rowed with fifteen oars on a side. Others likewise were ordered to be built upon the spot, of cypress, the only wood which Babylonia afforded; while mariners were collected from Phœnicia, and a dock was directed to be cut, capable of containing a thousand vessels, with buildings and arsenals in proportion to the establishment. To effect this design, Mikkalus had been sent down to Phœnicia with five³¹ hundred talents, and a commission to take all mariners into pay, or to buy slaves who had been trained to the oar.

Extensive as these preparations may seem, they were not too large for the designs of Alexander; he had conceived the idea of conquering Arabia³², and colonising both sides of the Persian Gulph.

³⁰ Κατέλαβε δὲ ἐν Βαβυλῶνι τὸ ναυτικὸν τὸ μὲν κατὰ τὸν Ἐυφράτην ποταμὸν ἀναπλευνὸς ἀπὸ θαλάσσης τῆς Περσικῆς ὅ, τι πρὶς σὺν Νεάρχῳ ἦν. Arr. lib. vii. p. 299. This does not amount to proof.

³¹ One hundred and six thousand eight hundred and thirty pounds.

³² An immense country without cities, property, or cultivation, deserts without water, and an enemy always flying and hovering at the same time, render the conquest of Arabia almost impracticable: but their armies are not formidable in the field; the feuds of their tribes, all independent by nature and habit, prevent coalition: and no point of union has yet been found, either in ancient times or mo-

dern, sufficient to bring a numerous body to act in concert, except during the warmth of Mahometism, and in the three or four first centuries after its propagation. Weak as the Turkish government is, the Pashas of Bagdat, Basra, Aleppo, &c. if soldiers, never hesitate to meet them in the field, or, if politicians, never fail to divide tribe from tribe, or family from family. The celebrated Ahmed, Pasha of Bagdat, employed arms, money, or treachery, as best suited the moment, and was master of all the Arabs round his Pashalic. Whether Yemen, which has both cities and cultivation, is exempt from conquest, is still problematical. The Abyssinians succeeded; Ælius Gallus was repulsed.

The conquest, perhaps, might have been as precarious as all other attempts which have been made against that singular nation; but a fleet on the Euphrates in the summer, while the stream³³ is full, and another on the gulph, might have restrained the piracies and incursions of their plundering tribes; and in the field they have never been formidable, except during the short period that fanaticism enabled them to act in concert.

It³⁴ was either with a view to this expedition³⁵, or, as the historians rather intimate with a design of re-establishing the canals, and benefiting the country by irrigation, that he now undertook a voyage down the Euphrates to Pallacopas. A voyage not without its difficulties; but they are such as the researches of d'Anville, and the visit paid by Niebuhr to the spot, enable us to remove. In the neighbourhood of Babylon, there are still the remains of two lakes, more celebrated by the names of Ali and his son Hosein than by any appellation of their own. The upper lake lies nearly on the parallel of Babylon; and at its northern extremity stands the

³³ Gallies of five banks of oars, such as those just mentioned, could never have been employed on the Euphrates. They might have been floated down during the increase of the river, but must have been intended for service either in the gulph, or to attend the army on the proposed expedition to Arabia. They could hardly have been useful to Nearchus, in his circumnavigation to the Red Sea.

³⁴ Gronovius, in a very long and angry dissertation, defends the sense which Vulcanius has given to this passage of Arrian, in opposition to the perversion of it by Isaac Vossius; and Vossius seems to deserve every reproof, short of the scurrility of his antagonist. The

criticism of Gronovius on the word ἀποστροφή, in which he proves it to mean the turning of the water back again from the canal into the channel of the river, removes all the real obscurity which enveloped this passage. The dissertation accompanies Gronovius's edition of Arrian.

³⁵ Gronovius, with great vehemence, rejects all consideration of Arabia, or Arabians, from the account; but there is some intimation in Arrian, that the city built by Alexander near the lake had a respect to this nation; and Strabo, p. 741, mentions it in express terms. Strabo does not notice Pallacopas, but only the voyage and the clearing of the fosses.

town of Kerbelai³⁶, containing Meschid Hosein, or the tomb of Hosein³⁷, grandson of Mahomet. From the southern extremity of this lake to the northern point of the lower, or Bahr Nedsjef, the distance is about five-and-twenty miles, with Meschid Ali a little to the east. Kufa, where Ali was murdered, is not more than six miles from this spot. It stood in a south-east direction between Bahr Nedsjef and the Euphrates; but is now totally ruined³⁸, and without inhabitants. It is this lower lake into which the Euphrates was diverted by the cut at Pallacopas, in the season of its inundation; and the opening or closing of this canal was committed to the satrap of Babylon, as a part of his office. In a tract like that on both sides of the Euphrates, where all is desert that cannot be watered, and every spot is fertile that can be flooded or drained at the proper season, this office must have ever been of the highest importance. While Babylon was the capital of the East, the controul of the waters invigorated all the contiguous districts; but when the Persian conquerors dwelt on the other side of the

³⁶ Hosein was killed at Kerbelai. The beautiful Arabian narrative of his death in Ockley almost makes amends for the deficiency of historic matter in this and almost every other Oriental work. See Ockley, vol. ii. p. 210. et seq. Meschid means the tomb of Ali, Hosein, &c.

It is the death of Hosein which gave rise to one of the most celebrated fasts of the Persians, and the murder of this family, which makes the distinction between the Shiites and Sunnites, the two great sects of Mahometism. The Persians curse Omar Abubecr and Ommawiah. Nadir Shah, notwithstanding his attempt to introduce the Sunnite tenets into Persia, adorned these two Meschids

of the Shiites at the expence (as Niebuhr says) of 66,666 German crowns for the roof only of Meschid Ali, and 13,333 for the service of Meschid Hosein; and yet neither of these Meschids is in his own kingdom, but both under the Turkish government. See Niebuhr, vol. ii. p. 206. Amst. edit.

³⁷ Meschid Hosein, or Kerbelai, is five German miles from Hilleh and five from Meschid Ali. Niebuhr, vol. ii. p. 217. The canal from the Euphrates is still preserved.

³⁸ Niebuhr mentions a dry canal at Kufa, (Dsjarre Zaade,) which would answer very well to the cut of Pallacopas, as I wish to fix it. Niebuhr himself calls it Pallacopas, vol. ii. p. 183.

Tigris, at Ecbatana, Susa, or Persepolis, as the due attention was discontinued, Mesopotamia, Chaldæa, and the capital declined together. The Parthian dynasty encouraged the increase of a desert between their own and the Roman frontier, and, in the latter vicissitudes of power, despotism and neglect have completed what policy might have commenced. Still it happened in every age, and under every government, that the neglect was not universal: the grand canals, it is true, have failed; but a partial distribution of the waters has constantly been preserved; and, even under the desolating empire of the Turks, is to this hour an object of comparative³⁹ importance.

If Alexander, then, had fixed upon Babylon for the future capital of his empire, (and here the sovereigns of the East ever ought to have fixed, if they had not rather wished to shrink from their European frontier, than to maintain it,) the first step necessary was to restore the country round it to the state it had enjoyed in its primitive splendour under the Babylonian monarchy. This had been effected by managing the superfluous waters of the Euphrates, by withholding them at one season and dispensing them at another, and by making the abundance of the summer subservient to the deficiency of the winter.

To these views we may attribute the expedition to Pallacopas, which was a canal issuing into a lake or marsh on the Arabian side of the river, fifty miles below Babylon. This lake is the Bahr

³⁹ While Ives was on his passage up, he met a Pasha coming down, with commission to direct the places where the bank was to be opened, or the outlets closed, p. 255. This is still an office of dignity, for this Pasha was a commander of 30,000 men; and as we may conclude that under the Turkish government, every drop of water is paid for, though the service will be performed badly, it will still be performed.

Nedsjef of Niebuhr, the Rahemah of d'Anville; it is now dry, in the winter season at least wholly, for Niebuhr⁴⁰ seems almost to have passed through the centre of it, and found nothing like a lake, though several cuts and channels now totally neglected⁴¹: if the water ever enters them at the height of the increase, it is not from the attention of the government, but from the natural level of the ground, and from the remains of ancient industry, policy, and discernment. Niebuhr is of opinion, that a canal ran parallel with the Euphrates from Hit, above Babylon, through the whole length of the desert, till it issued at the Khore Abdillah into the Gulph of Persia. I have already subscribed to this opinion; and though proof is wanting to identify the continuity of this channel through its whole extent, yet it is hardly possible to follow the march of armies, and the route of travellers in any age, without finding something to confirm this idea. From a view of the two lakes at Meschid Hosein and Meschid Ali, there is every reason to suppose that there was formerly a communication between them; and from Meschid Ali, or Bahr Nedsjef, to the sea, the existence of the channel is indubitable⁴². One proof of this is still existing, for no

⁴⁰ Niebuhr landed at Mäschwira, on the western bank, a little above Lemloon, and went by land to Meschid Ali. He must either have gone along the bed of the sea, or have seen it, if it existed. He was here in December. Vol. ii. p. 183. P. 209, he says, the lake was dry. Another name he mentions, El-Buheire.

⁴¹ D-jarré Zäade.

⁴² Arrian's testimony is express. Ἐκ δὲ τούτου, ὅτι θάλασσαν κατὰ πολλὰ τε καὶ μάλιστα ἀφανῆ σώματα ἐκδίδουσι. Lib. 7. p. 303.

The reason why these mouths were undiscernable [ἀφανῆ] to Arrian, was, because he had conceived the mouth of the Euphrates to be where we now find the Khore Abdillah;

and when we read in Pliny that the stream no longer flowed through this khore into the sea, because the inhabitants of Orchoe had stopped its course, we ought to conclude, that, between the age of Alexander and Pliny, the Arabs of the desert in the neighbourhood of the Bahr Nedsjef had diverted its waters in the time of the inundation, to irrigate their own lands, and consequently exhausted them instead of permitting them to follow their former course to the Khore Abdillah. If d'Anville's supposition were true, that there was another derivation from the Khore Abdillah to Bahrain, the extent of Niebuhr's canal would be increased to eight hundred miles.

traveller,

traveller passes the great desert between Basra and Aleppo, without encountering the remains of towns⁴³, buildings, and traces of habitation. These relics are hardly Arabian, for it is not the country where the Arabs live in towns; they are probably Chaldean, Syrian, or Macedonian, they must all have possessed water as the primary means of existence, and they have ceased to exist, because the Euphrates has ceased to convey to them the means⁴⁴ of fertilising the desert.

At what period we are to fix the failure of water in the two lakes is uncertain; neither have I hitherto found the means of investigating whether they are yet absolutely dry in summer. There is, however, still an aquæduct⁴⁵ to Kerbelai, and d'Anville marks two canals running into the Bahr Nedsjef, one at each extremity; the lower one he considers as Pallacopas, and the distance of fifty miles from Babylon corresponds better with this than that which he calls the Nilus, and brings in at the northern angle; but there is respectable authority to appeal to, that the higher one⁴⁶ is more suitable to the circumstances of the navigation; for it is evident that Alexander did not return out of the lake by the same channel that he entered it. Arrian mentions, that upon his return he steered his own vessel, with Babylon on his *left*: this cannot be true, if he

⁴³ Niebuhr, vol. ii. p. 307.

⁴⁴ Some springs or pools may have supported a few scattered villages, and some sources may have maintained a Palmyra: but the few waters found in the desert are usually brackish, as the soil is salt.

⁴⁵ Mentioned by Niebuhr, and Ockley calls it the river of Kerbelai. Hosein had been cut off from this water, in order to reduce him by thirst; but he died with arms in his hand, like a true descendant of the prophet. Ockley,

vol. ii. p. 222.

⁴⁶ The canal into the upper part of the lake, d'Anville calls Nilus; it passes by Ebn-Hubeira, and the lake itself sometimes takes that name. This is the Pallacopas of Niebuhr, and with great reason; for Al-Edrisi says, p. 204, "A castello Ebn-Hobaira profundit sese Eufates in universam ditionem Kufæ, residuis ejus aquis in lacus influentibus." No character can suit Pallacopas better than this. Mr. Howe's Papers.

entered

entered at the bottom, and sailed north; but if we suppose him to enter from the north, to sail southward, and then come out at the lower end, this course brings him very nearly to the marshes of Lemloon, in which Niebuhr⁴⁷ supposes him to be involved, and where all the peculiarities attendant upon his situation naturally take place.

But the immediate object of this expedition was a survey of the canal itself; it seems to have been a work of the Babylonian kings, and to have been neglected by the Persian sovereigns after the Conquest. It had been cut in a part of the bank where the soil was soft, yielding, and oozy; the difficulty, therefore, was enhanced, when the season arrived for closing it, and the satrap of Babylon, whose duty it was, employed thirty thousand men for three months before the stream could be restored to its course, and the mouth of the canal secured. By a survey of the ground it appeared, that at the distance of two miles lower down, the bank was firmer and the soil a rock, if the opening were made here, and a channel carried from this point into the original cut, it appeared easy to effect the stoppage of the waters when requisite, as the solidity of the bank would hinder the ravages⁴⁸ of the inundation in the first instance, and

⁴⁷ Niebuhr, vol. ii. p. 202. Ives, p. 251. Ives himself lost his way in the marsh of Lemloon, p. 255. The river, he says, still overflows a great way into the desert, p. 251. Banks to confine it, p. 258.

⁴⁸ The rapidity of the Tigris is noticed by all travellers, and its name derived from that quality by the Greeks. Pietro della Vallé thinks the Euphrates swifter, which proves the violence of both. Cosmas Indicopleustes has a pleasant solution of this; for he asserts that

the north of *his* plane of the earth is higher than the south, which is the reason that the Nile flows so slowly *up hill*! while the Tigris and Euphrates run rapidly *down hill* to the south. All that Cosmas saw he reports truly, though ignorantly; but he saw little except Abyssinia, and was never beyond the straits of Babel-Mandeb. (See p. 132. and 337.) It is a pity that his hypothesis and his theology had not perished, and his topography been preserved; the reverse unfortunately is the truth.

and afford a foundation for the works which were to obstruct it, after the increase of the river was passed.

Directions to this purpose Alexander gave on the spot; he then entered the canal, steering his own galley, and continued his survey through the whole extent of the lake. On the Arabian side he ordered a city to be built, which he intended manifestly as a frontier to Babylon in this quarter, or as a place of arms if he should commence his operations against the Arabians in this direction. D'Anville has placed this Alexandria at the northern point of the lake, at no great distance from Meschid Ali; but, so far as may be collected from Arrian, we should rather have looked for it at the opposite extremity; for there is nothing to make us suppose he returned out of the lake by the same passage he entered it; neither is it possible, if, as Arrian asserts, he sailed with Babylon on his left. On the contrary, if we subscribe to Niebuhr's opinion, and carry him into the marshes of Lemloon⁴⁹, he had actually deviated from his course,

truth. See Cosmas, p. 133. edit: Montfaucon.

There is a very odd connexion between the Christian Cosmas and the Mahometan Al-Edrisi (if he was a Mahometan). See Zocotora, p. 178. and the account of Christians sent there by the Ptolemies.

The Euphrates rises twelve feet perpendicular. The difference of its breadth at Bir is from 630 yards to 214. Pocock, p. 164. Howe's Papers. It rises sometimes in march, but the season is uncertain: it is always low in September.

⁴⁹ If the authority of Diodorus has any weight, he accords fully with the idea of Alexander's wandering at Lemloon rather than in the Bahr Nedsjef; for he says, the

fleet lost its course for three days and three nights. This could hardly happen in the Bahr Nedsjef, which is not fifty miles in extent. Vol. ii. p. 252.

Texeira makes it thirty-five or forty leagues in circuit, and six broad, as I learn from Mr. Howe's Papers. If he saw it himself, it is a proof that its existence has ceased between his age and Niebuhr's: it seems also to have been a lake in Pietro della Vallé's time; on his route from Basra to Aleppo he notices marshes on his left, nearly in this tract. I am not convinced but that it is still a lake, or at least a marsh in summer, though Niebuhr, who was there in winter, saw it not. Tavernier seems to have found the canal dried up. M. Howe.

and

and Babylon was on his left; and this marsh still continues very intricate to navigate, full of islands, and these islands still decorated with tombs³⁰. In winter, there are a variety of channels³¹ very narrow, where even the boats of Basra hardly find water; and in summer the course of the stream is so indistinct, that the men who draw the vessels are oftener in the water than on the bank: all these circumstances are correspondent to the difficulties Alexander encountered; and, if we may assume this supposition, he had actually lost his course and was going down the river, till the native pilots put him into the proper channel, and conducted him back again to Babylon.

The situation of Pallacopas is perhaps still capable of discovery, for the banks of the Euphrates are no where, as far as my information goes, noticed as consisting of stony ground, or rock; if, therefore, an appearance of this quality should occur, it may still be singular enough to attract the attention of our India travellers, some of whom come up every year from Basra to Hilleh and Bagdat, and the extent of country where they should direct their observations cannot exceed twenty or thirty miles, which must be on the left of their course, as they are going up between Rummahieh and Affca.

³⁰ It is a superstition of the oldest date to build tombs on islands in rivers, or in the sea, or in sequestered spots in the desert. There is, perhaps, hardly the Meschid of an Imam now, where there has not formerly been the tomb, the temple, or the shrine of some ancient hero, king, or fabulous deity. It is a profitable superstition to the natives, because religious visitants are attracted to desert spots, where there is no trade to allure merchants; and, consequently, though the religion of the East

has changed, the superstition has continued.

Ives mentions tombs of Imams, or saints, as still visited in the neighbourhood of Lemloon. Haleb, Hosein, Imam Kasai.

Lemloon lies in lat. $31^{\circ} 40'$, better than half way between Basra and Hilléh. See Ives, p. 256. et seq. The whole is a low wet country, the sides of the river full of sedge, and very distressing to the trackers; p. 257. See also Howel's Journal, p. 48.

³¹ See Niebuhr, p. 198. ut supra.

This is the last public service in which Alexander was engaged; his death took place not long after his return to Babylon, when all his plans of government, policy, discovery, or conquest, were annihilated by the dissensions of the great officers, which commenced upon his decease.

With his designs of conquest this work is not concerned; but at the head of his native forces, which had constantly been recruited, and possessed of treasures sufficient to allure the last man out of Macedonia and Greece itself, with the accession of the Asiatic levies which he was forming and disciplining on his own model, with the attachment of all his followers to his good fortune and his person, with the reputation he had acquired and deserved, of being the greatest captain of his age, wherever he had directed his arms the invasion must have been formidable, and his success far from dubious.

As to the omens⁵² also that preceded his departure, or the immediate cause of his death, I shall be silent; one thing only seems evident, that the poisoned cup is a fiction, his diary, still preserved, which records the progress of his disease, proves the gradual course of a fever rather than the ravages⁵³ of poison; the violence of his passions, the perpetual application of his mind, the constant exertion of his faculties, and the excesses of the table, are fully sufficient to furnish causes of dissolution, without having recourse to treason and conspiracy.

⁵² No man of importance met his last fate, according to the ancient historians, without omens; and this superstition is so prevalent, that hardly a family at the present hour is without omens in regard to some favourite member or other. I neither ridicule or believe them; but must observe, that sacred

history is as sparing upon this subject as profane history is profuse.

⁵³ Plutarch, who generally believes enough, does not believe the story of this poisoned cup. He says it was not heard of till some years after, when Olympias wished to render the family of Antipater odious.

But while I decline all inquiry on these subjects, I must glean the few remaining facts that characterise the disposition of this extraordinary man to the objects of discovery, as part of the scheme of empire which he had conceived, and which he never abandoned but with his latest breath.

The remains of the fleet which Nearchus had brought up the Euphrates, and the vessels which had been conveyed overland to Thapsacus, were still at Babylon, the prosecution of the discovery commenced at the Indus was still one of the principal designs in meditation; and the extension of the navigation round the continent of Arabia into the Red Sea was already anticipated. To prepare the way for Nearchus, three single vessels had been dispatched at different times down the Arabian side of the Gulph of Persia, and the report of their commanders had probably given better information to Alexander concerning this obscure coast, than our modern charts furnish at the present⁵⁴ moment.

The first of these vessels had been commanded by Archias, who proceeded no farther than Tylos or Bahr-ein, the centre of the modern pearl-fishery. Archias reported that he had found two islands, one at the distance of an hundred and twenty stadia from the mouth of the Euphrates [the Khore Abdillah], which was sacred to Diana⁵⁵, where a breed of goats and sheep was preserved, and

⁵⁴ See d'Anville's chart of the Gulph of Persia. Niebuhr has since supplied a map of Oman, but from oral information only. Alexander doubtless received a better account from his officers than the historians have preserved. He had established an office for these records, and the accounts they contained were not generally divulged.

⁵⁵ The perpetual error of the Greek historians, in attributing the deities of their own

country to the superstitions of Asia, is as conspicuous in Arrian as in Herodotus and Xenophon. We must suppose that Archias found on this island some rites similar to those appropriate to the Grecian Diana, and adopted her name instead of inquiring for that of the Parsee or Arabian mythology. Thus Cæsar attributes Mercury, Mars, &c. to the Celts, now known to be Woden and Thor. Lib. vi. c. 17.

never

never molested but for the purpose of procuring victims for the deity. To this island Alexander gave the name of Icarus, and it ought to be one of those at the bay of Grane, but the distance by no means corresponds; for an hundred and twenty of Arrian's stadia are only seven miles and a half, while the real distance is near thirty. Equally disproportionate is the position assigned to Tylos, the other island seen by Archias, which is stated to be at the distance of a day and night's sail in a light vessel, and with a fair wind. This, indeed, is a vague estimate; but ancient geographers consider a day's sail as five hundred Olympian stadia, and if we double this we obtain only a thousand of such stadia, or an hundred and twenty-five miles, while the real distance is upwards of two hundred: but that these are the two islands seen by Archias, notwithstanding the defect of the estimate, can hardly be doubted; for Tylos is described as large, well-wooded⁵⁶, and productive, circumstances which suit no other island on the western side of the gulph but Bahr-ein.

A second vessel had been sent out under the command of Androthenes, who is said to have proceeded some way round the coast of Arabia; but Hiero of Soli extended his course far beyond the two former, for he appears to have doubled Cape Mussendon, or Makæ, seen by Nearchus and Onesicritus upon their approach to the Gulph of Persia. The orders he had received from Alexander were, to circumnavigate Arabia, to go up the Red Sea, and make the bay of Heroopolis⁵⁷, on the Egyptian coast; by which is implied,

⁵⁶ Whether it has now wood I cannot discover.

⁵⁷ Suez is supposed to occupy nearly the site of Arsinoë, built at the western extremity of the Gulph of Arabia by the Ptolemies, at a later period. The actual bay was styled

Klyfma, or Klufma, from which the Orientals still call this sea, the Sea of Kolsun, by a transposition congenial to all their corruptions of foreign terms. Heroopolis was inland from Suez, and capital of a Nome from which the sea of Suez was named the Bay of Heroopolis;

plied, that he was actually to go to Suez, the extreme point of the Red Sea nearest Alexandria. These orders develop the whole plan of communication which Alexander had matured in his mind, and which, if he had lived a few months longer, he might have had the satisfaction to see completed. Hiero, however, was not able to execute his orders; but he seems to have gone down the coast below Maskat, and to have come in sight of Cape Raf-el-Had⁵⁸, the Syagros of the ancients: for his report when he returned was, that he had advanced to a great promontory which he did not dare to double, and that the continent of Arabia was of much greater extent than had been conceived.

Such were the previous steps taken to ensure the success of Nearchus; these vessels had failed at different times in the interval since Alexander's first arrival at Babylon; they were all galleys of only thirty oars, and little adapted to the service in which they were employed. What was effected must be attributed to the skill and courage of the officers⁵⁹, who had possibly failed with Nearchus; and, what they could not effect, to the deficiency of their vessels, and the state of the science in that age.

At the time the expedition was frustrated by the death of Alexander, Nearchus had received his orders to take the command of

polis; one proof that no city had been yet built like Suez at the extreme angle; that no trade had hitherto been carried up so high in the Red Sea; and that Alexander viewed this point of communication with Alexandria with the eye of a master. The sea of Suez is not very practicable, and the Ptolemies afterwards fixed upon Myos Hormus, from which point there was a caravan road to Ghinna on the Nile, which Bruce travelled, and has described most admirably with all that relates to Myos

Hormus, Coffeir, Portus Albus, and Orneon. There is a beautiful map of the Red Sea by Mr. de la Rochette.

⁵⁸ The Raffelgate of our charts.

⁵⁹ Archias only is known to be one of Nearchus's officers. Nearchus has not done justice to his followers, or, if he had done, Arrian has neglected them. Androthenes is considered as an officer under Nearchus by Plutarch.

the

the fleet; and, if he had prosecuted the object of his commission, he must have fallen down the Euphrates before the season that the increase of the river is passed: it was, perhaps, his intention to have waited at the mouth of the Tigris, or made his passage good to Makæ during the latter part of the summer; and the experience he had obtained would naturally suggest to him the expectation of the monsoon from the north-east in November and December. With the assistance of this he might have hoped to get round the coast of Arabia, as he had already performed his voyage from the Indus, but the circumstances are far different; the coast of Arabia is highly dangerous from Mussendon to Ras-el-Had; the winds fluctuate near shore; and, except Maskat, there is hardly an inlet which a vessel can enter without hazard of shipwreck, when the wind is boisterous. From this experiment, Nearchus was relieved by the death of his master: but it is impossible to convey a clearer idea of the designs which occupied the mind of Alexander in his last moments, than the language of his own diary will afford. The extract from it is preserved both by Plutarch and Arrian, and does not materially differ in the account of the two reporters, except that Arrian has preserved more notices of the fleet⁶⁰, to which he was perhaps peculiarly attentive, as being more appropriate to the nature of his work. The diary itself is subjoined, with some small degree of licence, in order to harmonise the accounts of the two different authors.

It appears from Plutarch⁶¹, that Alexander had given a splendid entertainment to Nearchus and his officers, two days preceding the account contained in the diary, which commences on the 28th of

⁶⁰ The army was to move on the fourth day, the fleet on the fifth. lib. vii. p. 308. The feast might be only one day previous to the 28th.

⁶¹ Plutarc. in Alexandro, p. 706. Arrian,

the Macedonian month Dæsius, in the year 324 A. C. From the circumstances which follow, it is evident that Alexander was on the eve of commencing his expedition against Arabia, and that Nearchus with the fleet was to accompany this expedition, and to coast the Arabian shore down the Gulph of Persia, to that point at least where his own circumnavigation was to commence. If, therefore, we can suppose the army to have been successful, it is not impossible that a plan had been formed of connecting the operations both by sea and land round the whole coast, into the Gulph of Arabia. Impracticable as this may be deemed, the design is similar to that which had been imagined on the coast of the Mekran, and the execution of which had been frustrated only by the same disasters that were likely to have occurred on the present occasion.

At the conclusion of the entertainment, when Alexander was returning to the palace, he was met by Medius⁶², who had been feasting a party of the officers, and now requested the favour of the king's company to do honour to the banquet. That night and the following day were spent in festivity, when it is not extraordinary that some symptoms of fever were the consequence of the excess.

The diary commences here, and contains the following particulars:

Dæsius.

18th. The king bathed, and, finding the fever upon the increase, slept at the bathing-house.

[The sleeping at the bathing-house is explained by Arrian, who states that he was conveyed on his bed to the river side, and carried over to a garden-house on the opposite shore.]

⁶² This is the account from Plutarch; and Arrian no otherwise disagrees than by softening the excess a little, and dividing it into two meetings instead of one continued.

Darius.

On this day, also, orders were issued for the land forces to be ready to march on the 22d, and the fleet to be prepared to move on the 23d.

19th. The king bathed; went from the bath to his chamber; passed the day at dice⁶³ with Medius; bathed again in the evening; attended the sacrifices in a litter⁶⁴; took nourishment⁶⁵ in the evening; the fever increased, and the night was passed in great perturbation.

Orders were issued for the officers to attend on the next morning.

20th. The king bathed; attended the sacrifices as before; conversed while in the bath with Nearchus, upon his voyage from India, and gave him fresh orders to be ready on the 23d.

21st. The king bathed; attended the sacrifices in the morning; found no abatement of the disorder; transacted business with the officers; gave directions about the fleet; bathed again in the evening; the fever still increased.

22d. The king removed into an apartment near the bath; attended the sacrifices; the fever now ran very high, and oppressed him much; he nevertheless ordered the principal officers to attend, and repeated his orders in regard to the fleet.

23d. The king was conveyed to the sacrifices with great difficulty; but issued fresh orders to the naval officers, and conversed about filling up the vacancies in the army.

⁶³ In conversation, Arrian.

⁶⁴ ἐν κλίνῃ, on a bed or Lectica; a palanquin rather than a sedan.

⁶⁵ Ate heartily, according to the translator

of Plutarch; but the author himself omits the adverb, and Arrian says, sparingly; ἐλίγοι διπνῆσαι.

Darius.

Dæsius.

24th. The king was much more oppressed, and the fever much increased.

25th⁶⁶. The king was now sinking fast under the disorder, but issued orders for the generals to attend in the palace, and the officers of rank⁶⁷ to be in waiting at the gate. He suffered still more towards the evening, and was conveyed back again over the river from the garden to the palace. Here he obtained a short repose; but, upon his awaking, when the generals were admitted, though he retained his senses, and knew them, he had lost the power of utterance.

26th. The fever had made a rapid progress all night, and continued without abating during the day.

27th. The soldiers now clamorously demanded to be admitted, wishing to see their sovereign once more, if he were alive; and, suspecting that he was dead, and his death concealed. They were suffered, therefore, to pass through the apartment in single⁶⁸ file without arms, and the king raised his head with difficulty, holding out his hand to them, but could not speak.

28th. In the evening the king expired.

This diary, without a comment, exhibits the attention of Alexander to the designs attributed to him in the preceding work better than any other language can express. It proves that he had entertained Nearchus only the day previous to his illness, and that the expedition of this officer was one of the principal objects

⁶⁶ Plutarch has an interval here from the 21st to the 24th; from τῇ δεκάτῃ φθινόρος to εὐδόμενῃ.

⁶⁷ χιλιάρχας καὶ πεντακοσιάρχας, commanders of a thousand and five hundred.

⁶⁸ ἐν τοῖς χιτῶσι καθ' ἕνα πάντες.

of his mind almost to the last moment that he had the power of speech.

The date of his death is the only point which now remains to be fixed; and as perfect satisfaction does not occur upon this subject from consulting the chronologers, it is more proper to state the difficulties than to determine the question authoritatively.

The year of his birth is fixed for Olympiad cvi. 1. answering to 356 A. C. in the archonship of Elpines⁶⁹. His accession to the throne, Olympiad cxi. 1. 336 A. C. in the archonship of Pythodorus. The day of his birth is assigned to the 26th of July by Dodwell; to August the 7th, by Scaliger: the day of his accession is the 24th of September⁷⁰, according to Usher; so that he was somewhat more than twenty years of age when he began to reign; and if his reign commenced in 336 A. C. the thirteenth year of his reign and the thirty-third of his life coincides with the year 324 A. C.

That he died in this year is established by the consent of Diodorus and Arrian; but Diodorus adds seven months, and Arrian eight, to the twelve years of his reign; and though these months do not encroach upon the Attic or Olympian year, which did not commence till Midsummer following, they evidently interfere with the calculation of Scaliger and Petavius, if they commence their year in January. This is the reason⁷¹, I conclude, which induces Usher and Blair to carry on the date of his death to the year 323 A. C. The chronology, indeed, of Diodorus is so perplexed, that having fixed the Voyage of Nearchus for 327 A. C. and brought Alexander

⁶⁹ See *supra*, b. i. p. 31.

⁷⁰ In August. Blair.

⁷¹ And so Falkoner's Chronology, 1796, p. 168, 169.

to Susa in 326 A. C. he is obliged to interpolate a year⁷², to give a false archon, and repeat the same consuls twice, a reproach which his learned commentator⁷³ is obliged to transfer to the transcribers, but which arose in fact from the historian having a year to fill up which he knew not where to find. It is, however, by this contrivance that he brings the date of Alexander's death to accord with the account of Arrian, or rather the authorities⁷⁴ which Arrian followed; so that both the historians agree on the year of the Olympiad cxiv. 1. or 324 before Christ, in the archonship of Hegesias.

It is here that the addition of seven months by the one, and eight by the other, raises a difficulty which it is not easy to obviate.

Petavius has a dissertation⁷⁵ expressly to solve this question, which he does by supposing that Dæsius, in the time of Philip and Alexander, answered to Hecatombæon, though it was afterwards made to correspond with Thargelion. Unfortunately, Hecatombæon is as little qualified to resolve our doubts as Thargelion, for it commences in July, and if it is July 324 A. C. even the twelve years of Alexander are not complete. Petavius says, indeed, that he had finished his twelfth year, and just taken the auspices for the commencement of his thirteenth; but this could not be true, if his accession was on the 24th of September, as Usher asserts.

Usher agrees with Petavius in supposing that Dæsius originally answered to Hecatombæon, and afterwards to Thargelion; but in

⁷² Olympiad cxiii. 4.

⁷³ See Diodorus Wesseling, vol. ii. p. 248. Note 9, in his *Audaciæ Specimen*, &c.

⁷⁴ Usher agrees with Petavius.

⁷⁵ Vid. *Dissertationes*, in fine, tom. ii. Petav.
his

his Ephemeris⁷⁶ he assigns the 1st of Dæsius to the 25th of April: the 28th of Dæsius consequently corresponds with the 22d of May; and, as his date of Alexander's accession is September 24th, it follows of course that his reign was twelve years complete on that day, in the year 324 A. C. and that the eight months extend to the end of the subsequent May in 323; this, therefore, is a calculation easily admissible, if Scaliger and Petavius had not fixed his decease in 324: but perhaps the archonship of Hegesias will enable us to reconcile the three chronologers; for the Attic year, Olympiad cxiv. 1. commences, according to Dodwell, on the 23d of July, and consequently Hegesias continued archon till that day. This statement brings all the calculations so nearly to a consistency, that one objection only remains, which is, that I cannot discover in any of the historians two winters after Alexander's return to Susa: one is evident; that, in which he subdued the Kossæi; but the year and five months afterwards, which he must have passed at Babylon and the neighbourhood, is not filled up by the transactions recorded, nor agreeably to the busy spirit of Alexander.

If, after the reduction of the Kossæi, he entered Babylon in the spring of 324 A. C. we have nothing to employ the remainder of that year but the visit to Pallacopas, which must have taken place during the increase⁷⁷ of the Euphrates, that is, between May and July, for he could not enter the canal before the bank was cut; or if we fix his voyage to the season of closing the Pallacopas, we cannot bring him there later than August, for in September the river is again below its banks. The account of his death succeeds this so im-

⁷⁶ De Anno Sol. Maced. p. 5 and 6.

⁷⁷ The inundation seldom takes place so early as May. Ives, p. 251.

mediately,

mediately, that, if there was an interval of eight or nine months, it does not appear. The opening of a campaign, indeed, suits better with the spring following, as Usher fixes it; and that he was going to set out on an expedition to Arabia appears from the orders issued to the troops and the fleet during his illness. If this consideration, therefore, appears reasonable, we may fix the death of Alexander still in Olympiad cxiv. 1. and the archonship of Hegesias, notwithstanding it will appear from our different commencement of the year to be the 22d of May, in the year 323 before the Christian æra. The difficulty of unravelling the intricacies of the Greek calendar, and the digestion of Greek months must apologise for such a degree of obscurity as may still remain upon this question; and even an acknowledgment of ignorance may be pardonable, since it has been lately proved by the Choiseuil Marble, that, after all the learned labours of Petavius and Corsini, the arrangement of the Attic months by Scaliger is finally confirmed.

immediately, that if there was an interval of eight or nine months it does not appear. The opening of a campaign, indeed, this being with the spring following, as Ulster fixes it; and that he was going to set out upon an expedition to Arabia appears from the under-mentioned to the same and the first during his illness. It is this conclusion, therefore, appears reasonable, we may fix the death of Alexander still in Olympiad cxi. 1. and the accession of Hegesias, notwithstanding it will appear from our different commentaries of the year to be the end of May, in the year 323 before the Christian era. The difficulty of unravelling the intricacies of the Greek calendar, and the digestion of Greek months into apostrophes, for such a degree of obscurity as may still remain upon the question, and even an acknowledgment of ignorance may be pardoned, it has been lately proved by the Chalcidic Month, that the learned labours of Petrus and Corini, the arguments of the Attic months by Scaliger is finally confirmed.

ON THE
SITE OF OPIS.

ARRIAN has recorded no circumstances which enable us to settle the position of Opis, we must therefore (if we suppose it to be the same city as the Opis visited by the ten thousand in their retreat) have recourse to Xenophon¹, who furnishes abundance of means for the resolution of the question; and that it is the same city, there can be little doubt; for there had been no revolution in Persia to alter either its name or place in the interval of seventy-six² years, which occurs between the expedition of Cyrus and the visit of the Macedonians. By the account of Xenophon, it appears to have risen upon the decline of the ancient Assyrian cities on the Tigris, several of which he found deserted; and it seems to have decayed in its turn³, as Seleucia and Apamea, the creations of the Seleucidae, rose into eminence. It was only a village in the time of Strabo; and in the age of Ptolemy, when Ctesiphon was growing up into a capital, it had so far sunk as not to be admitted into his catalogue.

The means of discovering the Site of Opis by the course of the Tigris, and its eastern bank, are obvious; for Xenophon places it on the Physcus, a stream which falls into the Tigris at the distance of twenty parasangs, or sixty Roman miles, from the place where the ten thousand crossed that river. The fixing of the passage, therefore, would give the position of the Physcus, or, if we can find the Physcus, we could discover the passage and the bridge of boats. The latter investigation does not appear difficult; for between Bagdat and Mosul there are three streams which fall into the Tigris on its eastern side, and no more. These are

From BAGDAT.

<i>Xenophon.</i>	<i>D'Anville.</i>	<i>Tavernier.</i>	<i>Ptolemy.</i>	<i>Pliny.</i>
1. The Physcus.	Odorneh.	Odoine.	Gorgus.	Tornodotus.
2. The Zabatus.	Altoun Sou.	Little Zab.	Caprus.	
3. The Zathes.	Lycus.	Great Zab.	Leucus.	

¹ Xenophon, edit. Leunc. p. 277. et seq.

² Expedition of Cyrus, 401 A. C. twelfth year of Alexander, 325 A. C. Blair's Chronology.

³ Ὡπὶς κώμη ἰμφορέϊον τῶν ἐν κύκλῳ τόπων. Strab. lib. xvi. p. 739.

These three rivers Tavernier notices in his passage from Mosul to Bagdat, which he performed by water in a kelek⁴; and the travelling Jeweller (as Gibbon styles him), who always travelled with his eyes open, marks the mouth of the Odoine in the very place where the Phycus ought to be found. By measuring off sixty Roman miles on d'Anville's map, we arrive at Bagdat, consequently it is plain he intended to fix the passage and the bridge of boats at the site of that city, where it continues to the present hour. If, however, d'Anville should be mistaken (which is hardly the case), the means of correcting his error are easy. Many of our English gentlemen, in going to and returning from India, prefer the route by Hilleh, Bagdat, and Mosul, to the passage over the great desert between Basra and Aleppo. Any one of these who would descend the Tigris, from Mosul to Bagdat⁵, in a kelek, may fix the mouth of the third river on his left, by observation; this must be the Odoine, or Phycus, and the distance between this and Bagdat is easy to obtain, as the latitude⁶ of that capital is already sufficiently established.

By these observations, the eastern side of the Tigris is cleared of its difficulties; and if it can be shewn that the march of the ten thousand on the western side points to Bagdat, all our authorities coincide. To explain this it must be premised, that d'Anville's wall of Semiramis and Xenophon's Median wall cannot be the same. It is evident, indeed, that there was a wall of Semiramis terminating at Opis, for Strabo⁷ twice mentions them together; but the march of the ten thousand cannot be made from any point of this wall to Sittaké and the bridge. Their march, after passing the wall, was only twenty-six⁸ miles to the Tigris; but if Opis is sixty miles above Bagdat on the eastern side, the wall of Semiramis cannot be less on the western; and consequently this cannot be the rampart which Xenophon calls the Median Wall. This Median wall, however, did exist; it exists⁹ in ruins at the present hour, and is seen by every traveller¹⁰ as he approaches

⁴ A vessel supported on the water by inflated skins, used on these rivers from the age of Xenophon to the present hour. See Tavernier, tom. i. liv. ii. p. 226. et seq.

⁵ The passage must be made by water to obtain this object, as the road between Bagdat and Mosul leaves the Tigris. Ives, when three days' journey from Bagdat, found a stream called Chiba Harpie, which, he says, falls into the Tigris; this, by the distance, might be the Odoine, but Niebuhr carries it into the Diala. Strange, that a traveller should not notice whether it flowed east or west! This road goes by Yanka, Karatope, &c. Dr. Howel's Journal agrees with Ives.

⁶ Niebuhr, p. 239. 33° 26'. D'Anville differs only a few seconds.

⁷ Lib. ii. p. 80. Lib. xi. p. 592.

⁸ Eight parasangs, fifteen stadia.

⁹ Ives went to visit Nimrod's tower; it lies west by

north, about nine miles from Bagdat. "We passed the Tigris by the bridge of boats, and rode through Old Bagdat, from whence, quite up to the tower, ruins of buildings either wholly above, or somewhat under ground, are still to be seen, which can be no other than the remains of the ancient Seleucia." This is perfect evidence for the remains of the Median wall, and, in the direction I give it, west by north: but Ives is mistaken when he talks of Seleucia; he was close to that city at Tahkti Khefra, which is south-east of Bagdat, not north-west. Old Bagdat, or the ruins he saw, might be the ruins of Sittaké; but Xenophon's usage of Sittaké is dubious; the district called Sittakené is east of the Tigris. Ives, p. 297. Tavernier, tom. i. p. 238.

¹⁰ Some of the public buildings at Bagdat consist of the old Assyrian bricks from this wall, or the ruins of Sittaké.

Bagdat¹¹ on the road from Hilleh, extending for many miles on his left. Where it touched the Euphrates is not discoverable; certainly not at Babylon, in the direction assigned to it by de l'Isle¹²; but, as I conjecture, at the very part where the Euphrates approaches nearest to the Tigris, where the intervening space is as nearly twenty-six miles as may be, agreeing exactly with the march of the twenty thousand. I suppose them to have crossed the Median wall close to the Euphrates, and to have measured twenty-six¹³ miles, in the direction of the wall, till it terminated at the Tigris, as it now does; and possibly at the very point where the modern bridge of Bagdat consists of boats, as it has done in all ages.

Let us now refer to the field of Kynaxa, where Cyrus lost his life. D'Anville places Kynaxa on a curvature of the Euphrates marked by the modern Hit or Het. There is every reason to suppose that in this position he is perfectly correct; and the reason for believing this is, because the ten thousand, on the first¹⁴ march after the battle, moved with their face to the north, for Xenophon mentions expressly that the sun rose on their right; this direction, therefore, was necessary to bring them out of the curvature in which they were inclosed. At night they reached a knot of villages which ought to lie in the situation of d'Anville's Makepracté and the wall of Semiramis, where it touches the Euphrates; but of this wall Xenophon takes no notice. On the second day they proceeded to other villages, where they found abundant provisions for their support. No distance is assigned to the march of either day; but it is evident, that on the second the direction of their course must be different from that of the first, for they did not dare to quit the Euphrates, least they should fail in a supply of water; and that they kept the river on their right, and followed its winding to the south-east, is proved by their approach to Babylon, from which Xenophon says they were not far, when some days after they passed the Median wall.

At these villages the army halted twenty days, while a treaty was going on with Tissaphernes; when, after commencing their march again, they reached in three days the wall of Media. Xenophon has not assigned measures to any of these five days' march after the battle; but if we allot five parasangs to each, it produces seventy-five miles Roman; a space which brings them to the point where the Euphrates approaches nearest to the Tigris,

¹¹ By Texeira, as I learn from Mr. Howe's Papers.

¹² De l'Isle gives the ruins upon his map as they really appear, but directs the termination of the wall west to Babylon. I cannot trace it so far, and suppose it to have crossed Mesopotamia at the narrowest part. Map of William de l'Isle, published by Joseph Nicholas de l'Isle, 1766. Kindly communicated by Mr. Jacob Bryant.

¹³ Strabo reckons 200 stadia, or twenty-five miles, at the wall of Semiramis. Did he confound the two walls?

or did he confound the site?—if the latter, there was one wall only instead of two. See Strabo, lib. ii. p. 80.

¹⁴ There is a movement previous to this, but it is only towards Arizæus, and probably over the field of battle. The possibility of a mistake in d'Anville can be founded only on an assertion of Xenophon's, that it is 300 miles from Kynaxa to Babylon: but Xenophon did not march the whole extent.

and makes the Median wall, if we place it here, seventy miles nearer Babylon than the wall of Semiramis, that is, sixty miles instead of an hundred and thirty. The army, according to this statement, ought to have crossed the wall near, or close to the Euphrates; and as we then find two days' march of four parasangs each to Sittaké, and two miles from Sittaké to the Tigris, this gives twenty-six miles, following the direction of the wall to Bagdat; and this, at a point where d'Anville makes the space between the two rivers less than thirty, and where Niebuhr¹⁵ makes it only from eighteen to twenty.

By this process, the movements of the army west of the Tigris point to Bagdat, as the measures from Opis end at the same city, taken on the east. The bridge of boats would be as necessary for Sittaké in that age, as for Bagdat at the present day; and thirty-seven, the number of the boats mentioned by Xenophon, is a medium between the highest and lowest statement of those employed at present, according to the season of the year. From these deductions it is easy to conclude, that the passage of the ten thousand was at Bagdat; but if not there, the space for error is very short. The wall proves, that it could not be higher up, and other circumstances prove that it could not be lower down the stream than the mouth of the Diala; this confines it within the limits of ten or twelve miles, which it is impossible to exceed. The Diala falls in on the east side of the Tigris between Bagdat and Ctesiphon, and the site¹⁶ of Ctesiphon is fixed by two ruins at the distance of a quarter of a mile from each other, called Tahkti Khefra¹⁷, (the throne of Khosroes,) and Soleiman Pac, or the tomb of Soleiman the Pure. These ruins were visited by Pietro¹⁸ della Vallé and Ives, and Ives mentions expressly his passing the Diala both going¹⁹ and returning. It is nearer, indeed, to Ctesiphon, but Ctesiphon is little more than sixteen²⁰ miles from Bagdat, and consequently the mouth of the Diala must be less. Now it has

¹⁵ Niebuhr says little more than six leagues. Vol. ii. p. 236. Voyage. Amsterd. edit.

¹⁶ Ctesiphon, the Tisbon of the Orientals, was built on the eastern side of the Tigris, opposite to Seleucia, which was in Mesopotamia; it rose under the Arsacidan dynasty during the second century. See Gibbon, vol. i. p. 211. And the remains of the two cities are still called Al-Mod-ain, the double city; from Medhi, Midhi, or Modhi, a fortress, and ain or ein; so Bahr-ein, the double sea.

¹⁷ The Aivan Khefra of Pietro della Vallé, built of burnt bricks, 1400 paces long; middle aisle 62 paces long, 33 wide. Ives gives a drawing of this building, p. 289. in which it has the appearance of Roman architecture; but such it can hardly be; it is certainly not Oriental, but may have been a palace or temple built by the Seleucidae, who might prefer a situation on the opposite side of the river to their capital, Seleucia. Ives says, the east front is 300 feet, breadth of the arch 85, height

106, length of the arched room 150.

¹⁸ Pietro della Vallé, tom. ii. p. 258. He saw the Diala as large as the Tiber, slept at a village somewhat lower down, and proceeded next day to Soleiman Pac. A proof that there is some considerable distance between the Diala and Ctesiphon.

¹⁹ Ives is not quite correct. He says, he passed at Yealla instead of ~~the~~ Yealla; for such Diala sounded to his ear, agreeably to the fluctuation of Dsjalla, so often noticed, like the Diamuna of Ptolemy, for Jumna or Jomanes.

²⁰ D'Anville makes it near twenty; but Ives left Tahkti Kefra about midnight, staid half an hour at the ferry of Diala, and reached Bagdat between six and seven in the morning. Suppose him to travel five hours, and it will scarcely amount to more than fifteen or sixteen miles, p. 291. Al-Edrisi says fifteen miles, p. 205. but his miles are dubious.

been proved, that the wall brought the ten thousand to Bagdat or near it, and the Diala confines them on the other hand, for if they had passed the Tigris below the issue of that river, they must have crossed the Diala after they arrived on the east of the Tigris; this they manifestly did not, as it is not noticed at all by Xenophon; and an author who records the passing of the Phycus could not have omitted a much larger stream.

The result of this inquiry serves to establish the position assigned to Opis by d'Anville; and it may be concluded he also fixed the passage of the Tigris at Bagdat. He has published a memoir, if I mistake not, on his map of the Euphrates and the Tigris, but I have not seen it; neither do I know how he has disposed of the Opis of Herodotus. On that Opis I must be silent, observing only that it cannot be the same as the Opis of Xenophon and Arrian; for he says the Gyndes falls into the Tigris, and the Tigris, after passing by Opis, issues²¹ into the Gulph of Persia. If we are to understand by this that Opis is near the gulph, it is evidently not the same city. He mentions in another passage, that the Tigris falls into the Gulph of Persia at Ampé, and if there had been any suspicion of the text in the passage before us, the two names might have been reduced to one; but there is no appearance of this sort, and I must leave the venerable father of history to his commentators.

²¹ Γύνδης ἐκδοῖ ἐς ἕτερον ποταμὸν Τίγρις p. 447. ἐν Ἀμπῇ πόλει παρ' ἣν Τίγρις
ὁ δὲ παρὰ Ὀπιν πόλιν εἶναι ἐς τὴν Ἐρυθρὴν θάλασσαν ποταμὸς παραρρεῖται ἐς θάλασσαν ἐξ αὐ-
ἐκδοῖ. Herod. lib. i. p. 89. Compare with lib. vi.

A P P E N D I X.

A D V E R T I S E M E N T.

THE learned Author of the second Dissertation says, with no little kindness, that had I had the *ill luck* to have consulted Usher's Ephemeris, I should not have applied either to his Lordship or Mr. Wales for a solution of my difficulty: but however it might have been unfortunate to have missed the acquisition of two such Papers, I feel in some degree the charge of negligence, for having failed in my pursuit at the very moment when I was in sight of my object.

The truth is, that I had worked my way through a mass of obscurity by the assistance of Scaliger, Petavius, Dodwell, and Columella; but the edition of Usher which I used was the English one, and in that, though I found a reference to his Treatise on the Solar Year of the Macedonians (which I have noticed), I did not find the treatise itself; neither is it contained in that edition. This, however, was the clue; and I am sensible of vexation, rather than shame, that I neglected the opportunity of seizing it.

In

In that Ephemeris, Usher, upon the authority of Euctemon, places the evening rising of the Pleiades on the eighth of Dios, corresponding with the first of October. This is Usher's own date of the voyage, upon a comparison of the two passages from Arrian and Strabo, in the eighteenth page of his treatise; and affords an irrefragable proof, among a thousand others, that both authors copied from the original Journal of Nearchus.

My own date, with the assistance of Dodwell, came out the second of October; and this difference, though of one day only from the estimate of Usher, I had laboured much to reconcile. The error was on my side; for I had miscalculated by reckoning the thirteenth of September, which is the first of Boedromion, exclusive, instead of inclusive. This is the extent of my offence; and, as my confession is unreserved, I have a right to expect absolution rather than penance.

After all the trouble caused by the discussion of this question, it is no little pleasure to find, that the issue renders Strabo and Arrian consistent, that it justifies Usher and Dodwell in their calculation of the year and month, and that this calculation is confirmed by the deduction of two proficient in a science which I have never had leisure to pursue, and to whom I had stated the question without furnishing all the data it required. I have now only to request, that the reader would consider the departure of the fleet from its first station in the Indus as fixed for the *first* instead of the *second* of October.

DISSERTATION I. i.

On the Rising of the Constellations.

DEAR SIR,

HAVING at last finished the calculations which are necessary to enable me to resolve your questions from Columella, I will endeavour to give you the best and plainest answers to them that I can. But to do this it may be necessary to say something concerning a branch of astronomy which was much cultivated by the ancients, namely, the risings and settings of the stars, as they respect the rising and setting of the sun. The points chiefly attended to were, the times when certain fixed stars, or constellations of stars, rose or set with the sun; the times when those stars set as the sun rose, and the times when they rose as the sun set. The determination of these points constituted a principal part of the astronomy of the ancients, and was esteemed by them of the utmost importance, because it was by these means that they regulated their festivals, judged of the returns of the seasons, and even estimated the length of the year.

As the sun, apparently, revolves in the ecliptic annually from west to east, while the fixed stars remain constantly in the same place, it is manifest the sun must come into conjunction, at one time of the year or other, with every star. In the present age the sun comes into conjunction; that is, into the same part of the

heavens, with the Pleiades about the middle of May, and, in consequence, rises and sets about the same time that they do; in this position, the constellation was said by the ancients to rise cosmically and set achronically. But it must be observed, that in all places which have northern latitude, a star, which is to the northward of the sun when they are in conjunction, will rise at the same instant that the sun rises a few days before the sun comes into conjunction with it, on account of the obliquity of the sphere; and will not set at the same instant the sun sets until the sun has passed the conjunction, and got to the eastward of the star: that is, the time when the star rises cosmically happens some days before that when it sets achronically; and the number of days by which the first of these circumstances precedes the latter depends partly on the latitude of the place, and partly on the distance which the star is to the northward of the sun at the time of conjunction. On the contrary, if the star be south of the sun at the time of conjunction, the star will set achronically before the conjunction, and will not rise cosmically till after it is past. The contrary to both these positions takes place in southern latitudes*.

While the sun is westward of the point which it is in when it rises with the star, it is manifest that the sun must rise before the star, and, consequently, the rising of the star cannot be seen. It is as obvious that the rising of the star cannot be seen when the sun and star rise together: but some time after that, when the sun has got so far east of the star as to be considerably below the horizon when the star rises, the twilight will be so little advanced that the

* If the place of observation be between the tropics, there are cases in which these two general rules do not hold good; but they are very limited, and not worth considering here.

star may be visible at its rising; and, as soon as this was the case, the star was said to rise heliacally. The number of days that this circumstance happens after the time when the star rises cosmically depends partly on the latitude of the place, partly on the declinations of the sun and star, and partly on the star's brightness: it can therefore only be determined, like the beginning and end of twilight, by observation. For the same reason, the star cannot be seen to set when it sets at the same instant that the sun sets; nor can it be seen to set for some days before that time, on account of the twilight: and when the sun approached so near to the star that it could be no longer seen to set, it was then said to set heliacally. These phenomena happen now about the latter end of May and the beginning of June.

After this, the sun advancing still eastward in the ecliptic, while the star keeps its situation, will have got so far beyond it, that some time in the beginning of November the sun will set as the star rises; and the star is then said to rise achronically. Moreover, the sun and star being at this time nearly in opposite points of the heavens, it must follow that about the same time, or a few days either before or after it, according as the place is in south or north latitude, and the star south or north of the sun at the time of conjunction, the star must set as the sun rises; and when it did so, it was said to set cosmically.

The longitude and latitude of the *Lucida Pleiadum* was determined with great accuracy by the late Dr. Bradley to be $8^{\circ} 26' 38'' 34''$, and $4^{\circ} 1' 36''$ north respectively, at the beginning of the year 1760; from whence it will be readily found that, at this time, and in the latitude of Rome, the Pleiades rise cosmically on or about the 10th of May, and set achronically about the 20th of

the same month: and that they rise achronically about the 12th, and set cosmically about the 21st of November.

These two last-mentioned circumstances, according to your extract from Columella, happened on the 10th of October and 8th of November, in the year 42 after Christ. You add, that according to Strabo, Nearchus sailed from the Indus, at the time when the Pleiades rose in the evening, or achronically in the year 326 before Christ; that Arrian informs us this was on the 2d of October; and you wish to be informed how near these dates and circumstances agree together when the precession of the equinoctial points is allowed for. You wish also to have a popular explanation of the term *Precession, in antecedentia*, and an account of its application to, and effect on, the phenomena which have been explained above.

The two points where the ecliptic crosses the plane of the earth's equator are called the Equinoctial Points. That which the sun is in on the 20th or 21st of March, when he passes to the northward of the plane of the earth's equator, is called the Vernal Equinoctial Point; and the other is called the Autumnal Equinoctial Point.

The earth is not a perfect sphere, but is in the form of such a bowl as is used on a bowling-green; the two poles being in the two flat sides, and its greatest diameters all in the plane of the equator. Now, as all bodies attract each other, the protuberant parts about the earth's equator are acted on by the sun and moon, when they are out of the plane of that equator, in such a manner as to cause the two equinoctial points to be carried backward, along the ecliptic, at the rate of $50\frac{1}{4}$ seconds of a degree in a year; and this motion of the equinoctial points is called, though somewhat improperly perhaps, the Precession of the Equinoctial Points.

As the vernal equinoctial point is carried backward by the above-mentioned quantity yearly, while the fixed stars retain their places, and as we continue to reckon the longitudes of the stars from that point, it is manifest the longitudes of the stars will be increased every year by $50\frac{1}{3}$ seconds. But as the motion of these points is in the plane of the ecliptic, this apparent motion of the stars will be parallel to the ecliptic; and, consequently, their distance from the ecliptic, which is called their latitude, will not be altered by it. It must be farther observed that the year (as it relates to astronomy) always begins when the sun is in the vernal equinoctial point; from which it will be evident that it is later, by a small quantity, every year than it was the year before, when the sun comes to the same longitude with any particular star, or to that point of the ecliptic where it rises or sets with it: and this is the cause why the Pleiades rise as the sun sets, and set as the sun rises, later now than they did formerly.

It has been already said, that the longitude of the *Lucida Pleiadum* was $8^{\circ} 26' 38''$, at the beginning of the year 1760; but in the 1718 years which elapsed between the years 42 and 1760, the precession of the equinoxes, at the rate of $50\frac{1}{3}$ seconds in a year, amounts to $86,472\frac{2}{3}$ seconds, or $24^{\circ} 1' 12\frac{1}{3}''$, which being taken from $8^{\circ} 26' 38''$, leaves $8^{\circ} 2' 37' 21\frac{2}{3}''$ for the longitude of η Pleiadum in the year 42 after Christ: and, as the latitudes of the stars remain the same², the point of the ecliptic which then rose with this star was $\gamma 29^{\circ} 7' 9''$, the obliquity of the ecliptic being at that time $23^{\circ} 41' 24''$. Hence the point which set as the star rose was $\alpha 29^{\circ} 7' 9''$; and this point, I find by Mayer's Tables, the

² I take no notice here of the very small fixed stars by the actions of the other planets change which is caused in the places of the on the earth.

sun was in on the 19th of October. By a similar process, I find that the point of the ecliptic which rose as the Pleiades set was $m\ 4^{\circ}\ 20'$, which point the sun occupied on the 29th of October that year.

The former of these determinations differs nine days, and the latter ten from the times assigned by Columella; but it may be remarked that the former of these errors is in defect, and the latter in excess; and as the stars rise and set sooner as the year advances, it follows, that on the 10th of October the sun would set a short time before the star would rise, and on the 8th of November the star would set some time before the sun rose; both which circumstances appear to be necessary if these phenomena were determined by observation, as, most probably, was the case. For it is manifest the star's rising cannot be observed when it rises exactly as the sun sets; nor can its setting be seen when it sets exactly as the sun rises, on account of the daylight, as hath been already observed: but, perhaps, the one might be seen by a good eye, in the latitude of Rome, nine or ten days before, and the other as much after the time when the two circumstances happened together; and I have not a doubt but that the difference between Columella's observation and my calculation is to be attributed to this cause.

I am next to inquire whether the effect of the precession of the equinoctial points will reconcile Strabo's account, which states that Nearchus sailed at the time when the Pleiades rose in the evening, that is to say, as the sun set, with the account of Arrian, who says expressly, that he sailed on the 2d of October in the year before Christ 326. In the interval between the year 42 after, and the year 326 before Christ, the precession amounts to $5^{\circ}\ 8'\ 42\frac{2}{3}''$, which being taken from $8^{\circ}\ 2^{\circ}\ 37'\ 21\frac{1}{3}''$, the star's longitude in the year
42 after

42 after Christ, leaves $\approx 27^{\circ} 28' 38\frac{2}{3}''$ for the longitude of the *Lucida Pleiadum* in the year 326 before Christ; and the point of the ecliptic which rose with the star, in this situation, at Rome, in the year 326 before Christ, the obliquity of the ecliptic being then $23^{\circ} 44' 13''$, was $\approx 19^{\circ} 26' 41''$: but as the sun was setting when the star rose, it must have been in $\approx 19^{\circ} 26' 41''$, the opposite point of the ecliptic, which point the sun occupied on the 17th of October; fifteen days after that which is fixed by Arrian for the sailing of Nearchus. Now if nine or ten days were sufficient to render the rising of the Pleiades visible at Rome, we are certain that more could not be requisite to render their rising visible at the place Nearchus sailed from, which is in a much lower latitude; we are therefore led to suppose, either that Strabo spake in general terms, (as indeed seems to be the case,) meaning only to point out the season, and not the day when Nearchus set out on his expedition, while Arrrian gave the precise day on which it happened, or that some mistake has crept into one or the other of these authors: to me, the former supposition seems most natural.

But notwithstanding it is highly probable that the apparent difference between the two historians ought to be referred to one or other of these causes, it is by no means certain that either one or other of them must be resorted to. It is possible that it ought to be attributed to another cause.

The preceding calculation is founded on a supposition that the Julian calendar has been in use ever since the year 326 before Christ; but we know it was not established by law till about 45 years before Christ, and that before that æra different modes of computation were used by different persons, who did not always tell us what mode of computation they made use of. Now, notwithstanding

withstanding both Arrian and Strabo refer to the same authority, it is possible the years by which that Author reckoned might differ from Julian years; and if they did, a greater difference than that which exists between them might arise from that circumstance.

There is a circumstance occurs in the foregoing calculations which may lead some persons to conclude I have committed a mistake in them; and which it is therefore necessary to obviate. The quantity of the precession in the interval between the year 326 before, and the year 42 after Christ is $5^{\circ} 8' 42\frac{2}{3}''$, a space which the sun is more than five days passing over. It may therefore be supposed, that the difference between the achronical risings of the same star, at these two times, ought to be between five and six days, whereas I make it little more than two: but it must be considered, that near three of these five days are anticipated by the excess of the Julian year above the true length of the solar year in that interval.

This, Sir, is the plainest answer I can give to the questions you have been pleased to propose. They betray no ignorance in a person who does not profess to be an astronomer, as the circumstances are certainly sufficient to create doubt, which every rational mind must be anxious to clear up. If I have contributed any thing toward this by what I have written, I shall be very happy, and am,

REVEREND SIR,

Your's very sincerely,

WILLIAM WALES.

CHRIST'S HOSPITAL,

Jan. 14th, 1796.

DISSERTATION I. ii.

On the Rising of the Constellations.

DEAR SIR,

YOU will receive, I hope, some satisfaction from the result of my calculations upon the different dates, assigned by Arrian and Strabo, to the commencement of Nearchus's expedition; which at first, I confess, I thought too discordant to be reconciled by any probable conjecture, without tampering with the text of Arrian, which, in my judgment, seemed to carry some marks of corruption.

The method I have taken has been to go directly to the investigation of the time of the acronychal rising of the Pleiades, in that part of the world where the voyage was undertaken, in the year before Christ 326, which was the year of the voyage; and, for a reason which will presently appear, I have not concerned myself at all with Columella's risings or settings.

Arrian says, that Nearchus sailed from the mouth of the Indus as soon as the Etesiae ceased, in the eleventh year of the reign of Alexander, according to the reckoning of the Macedonians and the Asiatics, and on the 20th of the Athenian month Boëdromion.

This eleventh of the reign of Alexander, it is agreed, was the year before the vulgar æra of our Lord 326; and the 20th of Boëdromion in this year, upon the authority of eminent chronologers, you take to have been the 1st of October, St. Jul. And in this reduction, "if there be any error, which, though I suspect, I will not too confidently assert, it cannot be of more than a single day.

Strabo's account is, that "the fleet failed in autumn about the season of the evening rising of the Pleiades, before the winds were fair, the barbarians attacking them and forcing them to sea."

This claims great attention, for it is Nearchus's own account. The words of Strabo import as much, and the thing speaks, in some measure, for itself. The character, by which the time is described, is of a sort to have been taken from the journals of the mariners themselves; for any second-hand writer of the voyage would have expressed it in a more popular manner, by affixing to it, as we see Arrian has done, a precise date, or a date at least pretending to precision, in some well-known civil reckoning. But if this character of the time of the commencement of the expedition came from the original journals of the mariners; it follows, that some two or three days before they failed, or two or three days after, (for in this sort of date no greater accuracy is to be expected,) they *saw* the Pleiades risen in the east, some short space of time after the sun was set in the west; or rather, since the star could not be seen when the sun was yet upon the horizon, they saw the star about an hour after sunset with that altitude, that they concluded it had risen at the moment when the sun set.

We

We have to inquire, therefore, on what day of the year, in the year of this voyage, namely before Christ 326, the Pleiades rose acronychally in that part of the world, from which these voyagers set out; that is to say, at the mouth of the Indus. If this should be found to agree with Arrian's date, all will be well. If not, the phenomena of the Roman horizon in the time of Columella, even upon the supposition that Columella's representation of them is exact, will throw no light upon our subject.

Now I assume 24° north for the latitude of the mouth of the Indus. This is nearly the truth; and I take the even number, because the difference of one-half of a degree, more or less, will not affect the result of the calculation.

By Dr. Bradley's observations, the longitude of Lucida Pleiadum, in the beginning of the year 1760, was $8^{\circ} 26' 38'' 34''$, and the latitude $4^{\circ} 1' 36''$ north.

The interval of time, between the beginning of the year 1760 and the beginning of the year before Christ 326, is 2085 Julian years; and, in this time, the retrogradation of the equinoctial points amounts to $29^{\circ} 7' 55''$.

Therefore, in the beginning of the year before Christ 326, the longitude of Lucida Pleiadum was $\approx 27^{\circ} 30' 39''$, and the latitude $4^{\circ} 1' 36''$ north.

The obliquity of the ecliptic at this same time was $23^{\circ} 44' 14''$.

In the figure annexed, let H A h, D A d, γ O E, represent the horizon, the equinoctial circle and the ecliptic, all projected upon the plane of the meridian of the mouth of the Indus, at the instant when Lucida Pleiadum is rising. Let the ecliptic intersect the horizon, on the eastern side in O; and on the western, in o. Let * be

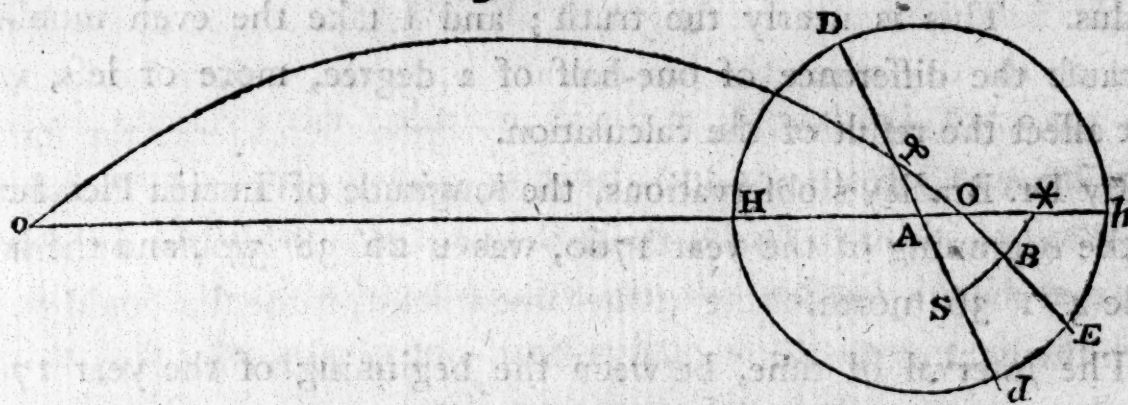
3 T 2

Lucida

Lucida Pleiadum upon the eastern horizon; then O will be the point of the ecliptic, which comes to the eastern horizon, and rises with the star; and the opposite point in the west, o , will be the point of the ecliptic, which sets when the star rises.

Through $*$ draw a great circle of latitude $* B S$, meeting the ecliptic in B , and the equinoctial in S . Then, in the spherical

Fig. 1.



triangle $\gamma B S$, we have the angle at B right. $B \gamma S$, the obliquity of the ecliptic, $= 23^\circ 44' 14''$; the side γB , the longitude of Lucida Pleiadum, $= 27^\circ 30' 39''$. Therefore, by the resolution of the triangle, we find the angle $B S \gamma = 69^\circ 4' 57''$, and the side $B S = 11^\circ 28' 56''$.

But the arc $* B$ is the latitude of Lucida Pleiadum, $= 4^\circ 1' 36''$; and $* S = * B + B S = 15^\circ 30' 32''$. Therefore, in the spherical triangle $* S A$, we have the side $* S = 15^\circ 30' 32''$; the angle $* S A$ (or $B S \gamma$) $= 69^\circ 4' 57''$, and the angle $* A S$, the complement of the latitude of the place, $= 66^\circ$. Therefore, by the resolution of the triangle, we find the angle $S * A = 43^\circ 24' 29''$.

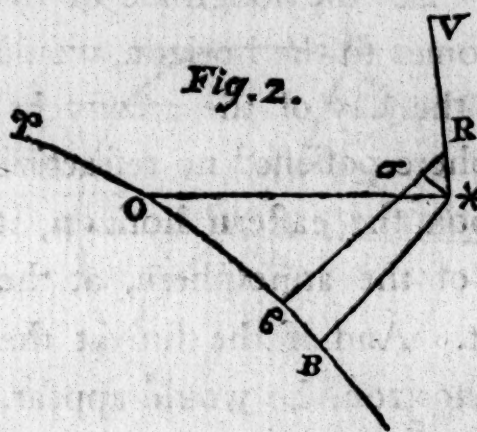
Before we proceed further in the calculation it is proper to observe, to save unnecessary trouble, that it will not serve our purpose

to

to ascertain the longitudes of the points O and o, which the resolution of one triangle more would give. But the longitude of the point o, which sets when the star really comes to the horizon, would give us only the day, which *would* be the day of the acronychal rising of Lucida Pleiadum, if the atmosphere possessed no refractive power. But when the star is really upon the eastern horizon, it appears, by the effect of the refraction of the atmosphere, at the height of about half a degree above it. And if the sun at the same time were setting upon the western horizon, he would appear, from the same cause, at the height of about half a degree above it; so that on the day when the sun is really upon the western horizon, at the same instant when the star is really upon the eastern, the star by the effect of refraction will have risen, and the sun will not be set. What we want to find is the day when the star would be *seen* rising, and the sun *seen* setting at the same instant, if the star could be seen in the light of the setting sun; which will be an earlier day, than that whereon the rising star and setting sun would come to the eastern and western horizon respectively at the same time. To determine this day of the visible acronychal rising of the star, we must estimate the effect of refraction both upon the star and upon the sun. The effect of refraction upon the star will easily be ascertained by means of the angle S * A, the quantity of which we have already determined; and this is the only use of the calculation, so far as we have yet carried it.

In figure 2, let O *, O B, * B, represent the same arcs of the horizon, ecliptic, and circle of latitude passing through the star, as in the former figure.

Through



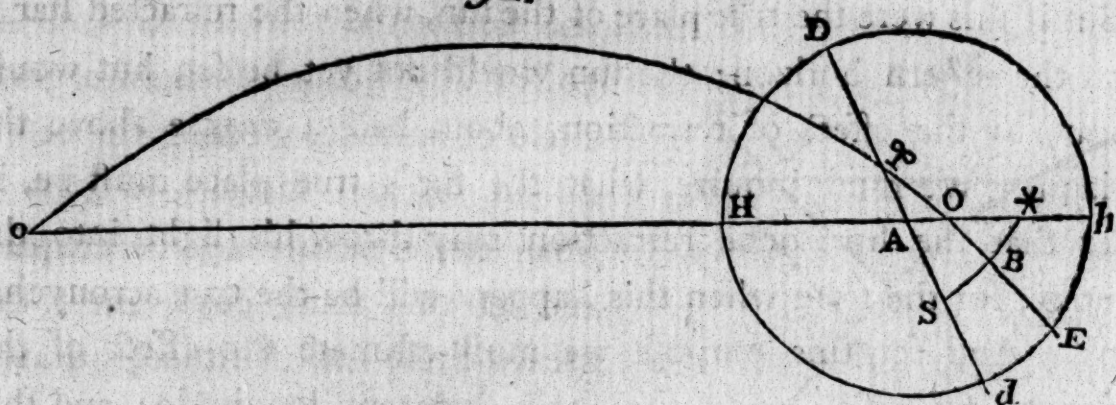
Through * draw a vertical circle * V, and set off an arc * R = to the horizontal refraction, *i. e.* = $30' 51''$. Through R draw a great circle of latitude, meeting the ecliptic in C; and through * draw a small circle parallel to the ecliptic, and let this small circle meet the great circle of latitude, drawn through R, in σ .

Now since the light of the rising star upon the horizon is thrown, by the effect of refraction, up to R, in the vertical circle, so as to appear in the heavens in the point R; the star, which, without refraction, would be seen, where it really is, at the point * in the circle of latitude * B, appears at the point R in the circle of latitude R C. Both the latitude and longitude, therefore, of the star are changed in appearance by refraction; the latitude being increased by the quantity of the arc R σ , and the longitude diminished by B C.

In the triangle * R σ , right-angled at σ , which for the smallness of its sides may be treated as a rectilinear triangle, the side * R = $30' 51''$; the angle R * σ , which with σ * O makes a right angle, must be equal to O * B (A * S of Figure 1.), which with the same σ * O makes a right angle; therefore, R * $\sigma = 43^\circ 24' 29''$. Therefore, by the resolution of the triangle, the side R $\sigma = 21' 12''$, and the side * $\sigma = 22' 24''$. This is the length of * σ in parts of a great circle; whence B C will be found $22' 28''$. Hence R C, the apparent latitude of the refracted star, = R σ + σ C = $4^\circ 22' 48''$, and γ C, its apparent longitude, = γ B - B C = $\gamma 27^\circ 8' 11''$.

Now

Fig. 1.



Now then, in Figure 1, we must resume the resolution of the triangles, making use of the star's apparent longitude and latitude, instead of the true. Thus in the spherical $\triangle B S$, which is right-angled at B, put $\angle B = 27^{\circ} 8' 11''$; the angle $B S$, $23^{\circ} 44' 14''$ as before. Then, by the resolution of the triangle, the angle $B S \angle = 69^{\circ} 0' 30''$, and the side $B S = 11^{\circ} 20' 29''$.

But * B is to be taken as the stars refracted latitude = $4^{\circ} 22' 48''$; and * S = S B + B S = $15^{\circ} 43' 17''$. Therefore, in the spherical triangle * S A, we have the side * S = $15^{\circ} 43' 17''$; the angle * S A = $69^{\circ} 0' 30''$, and the angle * A S, the complement of the latitude of the place, = 66° . Therefore, resolving the triangle, we find the angle S * A = $43^{\circ} 29' 34''$.

Then in the spherical triangle * B o, which is right angled at B, we have the angle B * o (S * A) = $43^{\circ} 29' 34''$; and the side * B, the star's refracted latitude, = $4^{\circ} 22' 48''$. Whence, resolving the triangle, we find the side O B = $4^{\circ} 8' 39''$.

Now γ B, the apparent longitude of the refracted star, = $27^{\circ} 8' 11''$; and we have found $O B = 4^{\circ} 8' 39''$. Therefore, $\gamma O = \gamma B - O B = 22^{\circ} 59' 32''$; and this is the longitude of that point of the ecliptic, which comes to the eastern horizon, at the same instant of time, with the refracted light of the star.

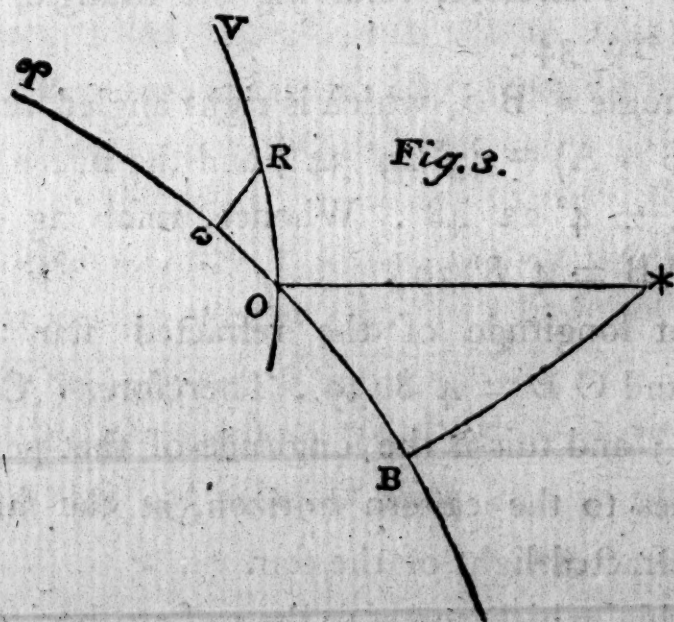
The point o opposite to this, which comes to the western horizon,

at the same instant of time, when the refracted light of the star is upon the eastern horizon, is $\simeq 22^{\circ} 59' 32''$.

But if this were the true place of the sun, when the refracted star is upon the eastern horizon; the sun would not yet be set, but would appear, by the effect of refraction, about half a degree above the horizon. We must inquire, what the sun's true place must be, in order that the horizontal refraction may throw his light into the point o ; for the time when this happens will be the true acronychal rising. And for this purpose we must estimate the effect of the horizontal refraction upon the sun's apparent longitude; and this depends upon the angle which the ecliptic, at sun-rise or sun-set, makes with the horizon; that is upon the angle $\gamma O A$ (Figure 1.) or its equal $* O B$.

The angle $* O B$ is easily found, by resolving the spherical triangle $* O B$, in which the angle at B is a right angle; the angle $B * O = 43^{\circ} 29' 34''$, and the side $* B = 4^{\circ} 22' 48''$. Hence the angle $* O B$ comes out $46^{\circ} 39' 57''$.

Now, to avoid confusion, draw the spherical triangle $O * B$ by itself in Figure 3. Through O draw a vertical circle $O V$, and



take the arc $O R =$ horizontal refraction $= 30' 51''$. Through R draw a great circle of latitude, and let it meet the ecliptic in the point a .

Then, if the sun be upon the horizon at O , the horizontal refraction will throw his light up to R , and in that point he will appear in the heavens. He will appear at

at R upon the circle of latitude R ω ; ω will be his apparent place in the ecliptic; and the arc of the ecliptic, O ω , will be the difference between his true and his apparent place; or the effect of the horizontal refraction upon his apparent longitude.

In the triangle R O ω , which, for the smallness of its sides, may be treated as a rectilinear triangle, the angle at ω is a right angle. The angle R O ω , being the complement of $\angle$ O B, is $43^{\circ} 20' 3''$. Hence O ω comes out $22' 26''$; and this, as has been said, is the effect of the horizontal refraction upon the rising sun's apparent longitude, his true place being O, in the latitude of 24° north. And the same will be the quantity of the effect upon the setting sun, in the opposite point of the ecliptic o, in the same latitude; for the quantity of the effect in any given latitude, upon the rising sun, in any given point of the ecliptic, and of the effect upon the setting sun in the opposite point of the ecliptic, will be the same; the angle which the ecliptic in opposite points makes with the horizon, upon which the effect depends, being equal: but the effect lies, in the two cases, in opposite directions; the refraction making the apparent longitude of the rising sun west of his true place, and the apparent longitude of the setting sun east of his true place.

Hence, that refraction might throw the light of the sun to the point o in the western horizon, at the same instant of time when refraction brought the light of Lucida Pleiadum to the eastern horizon, in the climate in question, we must put the sun's true place $22' 26''$ west of the point o.

The point O has been found to be $\Delta 22^{\circ} 59' 32''$; therefore the sun's true place, in order that the required effect should be produced, must have been $\Delta 22^{\circ} 37' 6''$. By an accurate calculation of the motions of the sun, (by Mayer's Tables,) I find that, in the year before Christ 326, he came to this place October 19, $10^{\text{hrs}} 25' 9''$

St. Jul. mean time under the meridian of Greenwich: but to this, to be exact, we must apply a correction for the effect of the precession upon the longitude of Lucida Pleiadum, in the interval between the commencement of the year and October 19th, (since the sun's place is deduced from the longitude of the star,) $+ 16''$; add also $4' 36''$, for the difference between the meridians of Greenwich and the mouth of the Indus, and we have October 19th, $15^{\text{hrs}} 17'$ mean time under the meridian of the mouth of the Indus.

The 19th of October (St. Jul.) therefore was the day of the acronychal rising of Lucida Pleiadum, upon the horizon of the mouth of the Indus, in the year before Christ 326, *i. e.* in the year of the Julian period 4388.

It may perhaps strike you as a difficulty, that the time that our calculation gives for the appulse of the sun to the required place, falling between three and four o'clock in the morning of the 20th, under the meridian of the mouth of the Indus, the sun was actually set on the 19th many hours before he came to that point of the ecliptic, which would have made a precise acronychal rising of the star, had the instant of the sun's appulse, in his annual course, to that point coincided with the instant of sunset: but this not being the case, you may wonder how we can say there was an acronychal rising at all.

Now this is really the fact; that, speaking with geometrical precision, there was in this year no day of an exact acronychal rising of Lucida Pleiadum; and it very seldom happens, that there is an exact acronychal rising of any star at any place, if we insist upon this strict sense of the words; because it very seldom happens, that the instant of the sun's appulse to the required point in the ecliptic, and the instant of sunset, are the same. They may differ several hours; and the same thing happens in the cosmical and heliacal risings

rifings and fettings; nevertheless, there will always be a day, when the rifing will be nearer to acronychal, than in any other. And this, physically speaking, is the day of the acronychal rifing; and, in our case, the 19th was that day; for on the 19th the fun, at the hour of funfet, was $24^{\circ} 45''$ of longitude behind the required place. On the 20th, at the hour of funfet, he was $35^{\circ} 58''$ before it; so that the fetting fun was much nearer to the required place on the 19th than the 20th.

I fear you will find the accuracy, with which I have purfued these calculations, tedious; but I have chosen to give them in detail, that they may be the more easily examined. I have been diffuse upon the refractions, because the effect of refraction upon the longitude and latitude of celestial objects, though a matter of no difficulty to mathematicians, is not generally understood; and yet is very intelligible, if those who are masters of it would take the trouble to explain it.

The 19th of October (St. Jul.) you see was the day of the acronychal rifing of Lucida Pleiadum at the mouth of the Indus, in the year of our voyage. The voyage commenced, according to Arrian, on the 20th of Boëdromion (for that he gives as the very day on which the fleet failed), and the 20th of Boëdromion in that year, you reckon, with Dodwell, the 1st of October; and in this reckoning there can be no material error.

I have never examined Dodwell's Tables of the Metonic Cycles. I make use of a very compendious Table of my own, by which I can, in a very few minutes, ascertain, on what day of the Julian year the 1st of Hecatombæon, in any given year of any given Metonic Cycle, fell, according to the principles upon which my Table is formed. And the 1st of Hecatombæon, *i. e.* the beginning of the year, being once determined, the whole year is easily reduced to the Julian

reckoning, by a general Table of the Cycle. In the principles upon which my Table is formed, I agree not entirely either with Scaliger or Petavius. In the order of the months, I agree with Scaliger. I agree with Scaliger in the epoch of the first Cycle; placing it on the 15th of July, not on the 16th with Petavius. I place the Embolimæan month in the 3d, 6th, 9th, 11th, 14th, 17th, and 19th years of the Cycle: in which I agree entirely with Petavius, except in the third Embolism, which he (with Scaliger and Dodwell) places on the 8th year of the Cycle. I put it in the 9th; dissenting, I confess, in this from every one. In the arrangement of the exærefimal days, I follow the very best authority I know, that of the learned astronomer Geminus.

Now the year of the voyage in question was the year of the Julian period 4388; it was therefore the 107th Metonic year; that is, the 12th year of the 6th Cycle. That is to say, five Cycles were completely run out, since the first introduction of this 19-year period, and the 12th year of the 6th Cycle was in its course. And I find by my own Tables, that the 1st of Hecatombæon, in the 12th year of the 6th Cycle, fell on the 15th of July (St. Jul.). Add 29 days (for the Hecatombæon of this year was a hollow month), and we come to the 1st of Metageitnion, on the 13th of August. Add 30 days (for Metageitnion of this year was a full month), and we come to the 1st of Boëdromion, on the 12th of September. The 12th of September being the 1st of Boëdromion, the 1st of October ought to be the 20th of Boëdromion. But Boëdromion in this year was a hollow month, and the exærefimal day came before the 20th, being the 18th; therefore the 30th of September was the day which, according to my principles, was counted the 20th of Boëdromion in this year.

By

By Scaliger's principles, the 20th of this Boëdromion will fall on the very same day, the 30th of September. By Petavius's, one day later, namely on the 1st of October.

It is certain, therefore, that on one of these two days, either the 30th of September or the 1st of October, Nearchus sailed from the mouth of the Indus, according to Arrian; consequently, he had been eighteen or nineteen days at sea, before the day came of the acronychal rising of *Lucida Pleiadum*; taking acronychal rising strictly, according to the mathematical definition of the terms. It is true, that Strabo's words import not that the fleet sailed on the very day, but at the season only, of the acronychal rising of the *Pleiades*; but yet eighteen or nineteen days seemed too great a difference to admit even this lax description of the time. I was at first, therefore, inclined to suspect an error in the name of the month in Arrian; and I tried a conjectural emendation; but the severe test of a strict calculation compelled me to discard it.

After various conjectures, and many long calculations, I am entirely persuaded, that Mr. Wales's very ingenious conjecture, by which he reconciles his calculation of the acronychal rising of the *Pleiades* at Rome, in the year of our Lord 42, with Columella's date, is the only solution, and the true solution of the difficulty. The perfect agreement that it will produce between Arrian and Strabo, in the time of Nearchus's sailing, is indeed astonishing.

Mr. Wales observes, that the exact acronychal rising of a star is never visible, on account of the sun's light; but it is equally true, that the rising of the star for several evenings before the day of the acronychal rising will not be visible: for the sun must not only be set, but he must be set and sunk to a certain distance below the horizon, for the twilight to be sufficiently faint to allow the fixed stars to appear. Suppose then, that on a certain day, no matter what, the
sun

sun is sunk somewhat below that distance, when a particular star is upon the eastern horizon; on that evening, if the sky be clear, the rising of the star may be observed. Suppose, that the next night the sun is not sunk quite to the required distance, when the same star is upon the eastern horizon: then the rising of the star will not be visible; and when the star becomes visible, it will be seen at some small distance above the horizon: the next night, it will be at a greater height above the horizon, when it is first seen; the third, a greater still; and, on the evening of true acronychal rising, the star will have gained a very considerable height, when it is first seen. It certainly was very natural (and it was the only way for popular use) for the ancients to call that the evening of the acronychal rising, on which they first missed the sight of the rising star.

The distance below the horizon, to which the sun must be sunk when a star first becomes visible, is different according to the magnitude of the star. Lucida Pleiadum is a star of the third magnitude; and Ptolemy says, that stars of the third magnitude first become visible when the sun is sunk 14° below the horizon. Now I find by calculation, that in the year of the Voyage (of the Julian period 4388), when the sun was 14° below the western horizon, at the same instant of time when Lucida Pleiadum came to the eastern horizon, his true place must have been $\simeq 3^{\circ} 33' 56''$; and he came to this place in that year, September 30, $12^{\text{hrs}} 59'$ (St. Jul.) mean time under the meridian of Greenwich. Apply, as before, the proper correction for the effect of the precession upon the longitude of Lucida Pleiadum, namely $+ 15'$, and we have September 30, $13^{\text{hrs}} 14'$ mean time under the meridian of Greenwich. Add $4^{\text{hrs}} 36'$, and we have September 30, $17^{\text{hrs}} 50'$ mean time under the meridian of the mouth of the Indus; which, as we in our civil reckoning divide the day, was 10' before six in the morning of the 1st of October.

On

On the evening, therefore, of the 30th of September, the sun (setting in that latitude about $5^{\text{hrs}} 57' 26''$, apparent time after noon) would be many minutes more than 14° below the horizon, when Lucida Pleiadum was rising. The rising of the star, therefore, that evening might be seen a minute or two later than $1^{\text{hr}} 0' 24''$ after sunset; but the next evening, the 1st of October, the sun would be only $13^\circ 37' 15''$ below the horizon, when the star was rising, wanting $22' 45''$ of the full depression of 14° . This evening, therefore, the star could not be seen upon the horizon. But as the sun sunk at the rate of $13' 40''$ in $1'$ of time, he would sink to the limit of 14° in $1' 40''$ of time after the instant of the star's rising; and as the star rises in the latitude of 24° north, at the rate of $13' 11''$ in $1'$ of time, the star, $1^{\text{hr}} 0' 24''$ after sunset, and $1' 40''$ after the moment of its own rising, would break through the expiring twilight with the apparent altitude of $21' 58''$ (I say with the *apparent* altitude, for the effect of refraction upon the star is included in these calculations). This altitude is very sensible to the naked eye, being scarce less than $\frac{2}{3}$ of the whole diameter of the sun: but the next evening (Oct. 2d) would certainly put the matter out of doubt; for, on the 2d of October, the star, at the same distance of time after sunset, would break through the remains of the twilight, with the very sensible altitude of $1^\circ 2' 48''$ at the moment of its first apparition. Whence our mariners would conclude, that the sensible acronychism was past. It appears, therefore, that what these mariners would call the acronychal rising of the Pleiades, took place either on the very day the fleet failed, or the next, or, at the latest, the next day but one.

Thus, by a train of calculations of considerable length and labour, but of the greatest certainty, and pursued with the most scrupulous accuracy, by the help of Mr. Wales's suggestion, the
ingenuity

ingenuity of which I cannot sufficiently admire, we have brought the two accounts of Strabo and Arrian to a perfect good agreement.

I congratulate you and myself upon the success of the investigation, and remain,

DEAR SIR,

Your very faithful friend

and obedient servant,

S. ROCHESTER.

DEANERY,
June 6, 1796.

P. S. You will perhaps suspect that I have committed a mistake in the very entrance upon these calculations, by reckoning the interval between the commencement of the year before our Lord 326 and the commencement of the year of our Lord 1760, no more than 2085 Julian years, whereas you may think it was 2086. The truth however is, that, through carelessness, I fell into the opposite mistake; I reckoned the interval 2086 Julian years instead of 2085; and, by this inadvertency, I gave myself the trouble of going through the whole calculation from beginning to end a second time, and of correcting all my numbers; though the error accruing from this over-reckoning of that interval, might well have been neglected in this investigation.

To understand how it is that the lesser is the true interval, you must know that it is the uniform error of chronologers, reckoning by the æra of our Lord, to reckon the years before our Lord too many by one. The year which chronologers call the year before Christ 326, was the year of the Julian period 4388, as you may see by turning to Blair's Tables, Petavius, or Usher. The year of our Lord 1760 was the year of the Julian period 6473; the interval,

terval, therefore, is 2085 Julian years. The reckoning by the æra of our Lord, when we have to do with time antecedent to the æra, is seldom conducted with precision but in astronomical tables. If you turn to Mayer's Tables, you will find there, in the first page of the Epochs of the Sun's Motions (p. 6.), and again in the first page of the Moon's Epochs (p. 36.), a year of Christ, 0; and it appears by the epochs ascribed to this year of Christ, 0, that it is the year of the Julian period 4713. Now, the year of the Julian period 4713, chronologers call, as you will see again by their tables, the year *before* Christ 1; at the same time they call the next succeeding year of the Julian period, *viz.* 4714, the year *after* Christ 1; and by this inaccuracy of their language, they in effect represent the interval between any numerical day of the year 4713 of the period (the 1st of March for instance) and the same numerical day of the very next year of the period, as consisting of two whole years instead of one.

Since I finished my calculations I have, almost accidentally, met with what I deem a strong confirmation of the accuracy of the conclusion to which they have brought us. In Archbishop Usher's Ephemeris of the Macedonian year, I find this entry against the 8th day of the month Dios. "*Euctemoni vespertinae apparent Pleiades.*" The 8th of the month Dios, according to Usher's reduction of the Macedonian year, was the 1st of October (St. Jul.). Euctemon the astronomer is mentioned by Ptolemy as Meton's assistant, in the observation of the summer solstice. He flourished, therefore, in Greece, about a century earlier than the time of this expedition.

I imagine that Archbishop Usher took this date of Euctemon's evening rising of the Pleiades from Geminus, reducing Geminus's date to the Macedonian year; for in Geminus's parapegm

which he gives in the 16th chapter of his *Isagoge*, I find this entry:

Τὸν δὲ ζυγὸν διαπορεύεται ὁ ἥλιος ἐν ἡμέραις λ.

And a few lines lower,

Ἐν δὲ τῇ Ε Εὐκλήμονι Πλειάδες ἑσπέριαί φαίνονται ἐκ τῆ πρὸς ἑω.

The numeral E denotes the 5th day of the sun in Libra. The sun entered Libra, according to Euctemon and Meton, September 27th; his 5th day in Libra, therefore, was October 1, the 8th of Usher's *Dius*.

On the 5th day of the sun's passage through the sign of Libra, he was in the 5th degree of Libra according to the mean motions; and the *prosthaphæresis* at this time being $1^{\circ} 38'$, with the negative sign, his true place was in the third degree of Libra. And this again agrees wonderfully with my calculations.

Had you had the ill luck to consult Usher's *Ephemeris*, or Geminus's, instead of Columella, you would not have proposed this question to Wales or me; for you would have taken it for granted, that Strabo and Arriana greed. Had either he, or I, consulted them before we calculated, we perhaps should not have engaged in the labour of these calculations. We should have advised you to follow Euctemon, without regard to Columella describing the phenomena of another climate in another age; but then we should not have discovered what Wales has conjectured, and my calculations, I think, put out of doubt; that when the ancients speak of acronychal risings, they are to be understood of the sensible acronychism: and this is a principle which may prevent many mistakes in deducing conclusions in chronology from these astronomical characters of time which the ancients used.

NOTE

NOTE on the small STADIUM of ARISTOTLE, p. 52.

By the Right Rev. Dr. HORSLEY, Lord Bishop of Rochester.

CIRCUMFERENCE of the earth, according to Eratosthenes, = 252,000 stadia; Aristotle, = 400,000 stadia; therefore Aristotle's stadium to the stadium of Eratosthenes as 252 to 400, that is, as 5 to 8 very nearly. This is a much more exact proportion than that of 4 to 7; for the proportion of 4 to 7 makes Eratosthenes's stadium too large by almost $\frac{1}{5}$; whereas the proportion of 5 to 8 makes it too large by no more than $\frac{1}{14}$.

Proportion of Roman foot to London foot 97:100: hence Roman foot = 11,64 inches; passus (5 feet) = 4 feet 10,2 inches, London measure; milliare (1000 passus) = 7 furlongs 76 yards 2 feet, or 4850 feet London measure.

Call the Roman passus P, milliare M, Olympic stadium Σ .

Now (by Polybius as quoted by Strabo) $M = 8 \Sigma + \frac{1}{4} \Sigma$.

Hence $125 P (= \frac{1}{4} M) = \Sigma + \frac{1}{4} \Sigma = \frac{5}{4} \Sigma$.

Hence $5 P = \frac{1}{4} \Sigma$; and $120 P = \Sigma$.

Hence Σ , or Olympic stadium, = 582 feet London, or 194 yards.

or Olympic stadium, = 0,110227'27' miles London.

$8:5 = 0,110227'27':0,0688920'45'45'$.

Hence Aristotle's stadium = 0,068892045'45' miles London.

3 x 2

Hence

	Aristotle's Stadium.	Miles London.
Hence from Jamad to Mouth of Indus,	= 10000	= 689
Coast of Arabiæ,	= 1000	= 68,9
Oritæ,	= 1600	= 110,24
Ichthyophagi,	= 10000	= 689
Karmania,	= 3700	= 254,93
Perfis,	= 4700	= 323,83
Total,	31000	= 2135,90

Hence, by reduction of the Greek measures, the whole distance should be 2135,9 miles London; which, however, if the decimals had been more exactly computed, would have been 2135,65 miles London: for $0,068892 \times 31000 = 2135,652$, the actual measurement by the moderns, gives 1908 miles; the difference is 227,65 miles London, or $\frac{1}{8}$ ths of the whole distance.

But if 8 Olympic stadia were exactly a Roman mile, and Polybius's addition of $\frac{1}{8}$ of a stadium was an error of his, arising from the difference between the Roman and the Olympic foot; then 1 Olympic stadium was 606,25 feet London, or 0,1147774 miles London, and Aristotle's stadium will be 0,0717359 miles London, and the whole distance will be $0,0717359 \times 31000 = 2223,8$ miles London, which makes the difference between the ancient and modern measures still greater; and this makes it probable that Polybius's estimation of the stadium was right.

It is to be remarked by the way, that if this estimation was right, the opinion which has so generally and so long prevailed of a difference between the Greek and the Roman foot, making the former greater than the latter, in the proportion of 25 to 24, must be erroneous. It seems to have been current

among the Romans themselves, but it must have been founded on a gross estimation of the length of the Olympic stadium. The Romans, in their popular valuation of the Greek measures, would be apt to reckon eight Olympic stadia to be exactly equal to their own mile, taking no account of the fraction mentioned by Polybius. Hence they would infer, that the Olympic stadium was 125 Roman passus, *i. e.* 625 Roman feet, which is, indeed, the length expressly assigned to it by Pliny. But it was very well known, that this stadium was but 600 of its own feet. It was concluded, therefore, that 600 Greek feet make 625 Roman, whence the consequence would be, that the Greek foot was to the Roman as 625 to 600, that is, as 25 to 24. But if the Roman mile actually was, what Polybius reckons it, $\frac{1}{3}$ of a stadium more than eight stadia, the length of the stadium turns out exactly 120 Roman passus, or 600 Roman feet. And since it was also 600 Greek feet, the Greek and the Roman foot must have been the very same.

DISSERTATION II.

*On the FIRST MERIDIAN of PTOLEMY.**By M. de la ROCLETTE.*

TO Dr. Vincent's question concerning Ptolemy's longitude, I will try to answer in the following manner. If Ptolemy had determined the meridian of *Londinium* by the difference of time between that place and the meridian of Alexandria, as it is believed by Maginus and some others, I do not know how we could be justified in the reduction of his longitude, or, which is the same thing, in the augmentation of his degree; but these horary differences have been deduced from the graduation itself, which is the result only of itinerary distances shortened beyond measure by Ptolemy, in order to bring all the places within his stereographic projection; thence his degree of a great circle contains a fifth less of stadia than it ought to contain, *viz.* 500 instead of 600.

In his first Map of Europe, Ptolemy places London 20 degrees to the east of the Fortunate Islands. In the account of the most remarkable places where celestial observations are supposed to have been made, the horary difference between London and Alexandria is 2 hours 40 minutes, or 40 degrees. Now, as Alexandria is 4 hours distant from the Fortunate Islands, the same longitude of 20 degrees east of these isles is again found for the meridian of London.

Longitude

Longitude of London from Ferro, according	20	0	0
to Ptolemy, - - - - -			
According to Dr. Maskelyne's Tables, -	17	40	13
Error of Ptolemy, - - - - -	2	19	47
Longitude of London from Alexandria, ac-	40	0	0
cording to Ptolemy, - - - - -			
According to the <i>connoissance des temps</i> , -	30	16	9
Error of Ptolemy, - - - - -	9	43	51

Which ought to be, - - - - - 10 13 51 if you follow the editions which place Alexandria in $40^{\circ} 30'$.

Ptolemy places the *Civitas Parisiorum*, vel *Lucotecia*, in $23^{\circ} 30'$ from the Fortunate Isles, or $3^{\circ} 30'$ east of London, instead of $2^{\circ} 25' 37''$ (Maskelyne's difference of longitude between the two places). Now if we decrease by a fifth the difference expressed in the Alexandrian Geographer, we shall have $42'$ to deduct, which will bring that interval to $2^{\circ} 48'$, or pretty near the true one. This I look upon as the longitude really assigned by Ptolemy between London and Paris.

The same operation made in respect to the longitude of London from Ferro, or the Fortunate Isles, will bring London to 16° instead of $17^{\circ} 40' 13''$, and then the error is only $1^{\circ} 40' 13''$. The distance between the meridians of London and Alexandria is also reduced by that means to 32° , and the error in that immense space becomes less than 2° .

The

The maps of Ptolemy, constructed upon the principle of his short degree, have given the Mediterranean an extent of about 20° of longitude more than it ought to have, when in reality the author has not exceeded the true length by 4° , or thereabout. This enormous disfiguration was followed and improved during 14 centuries. At last, the learned Gassendi (in the middle of the last century) wrote against such an absurdity; and, some years after, Guillaume de Lisle gave us a Mediterranean only 860 leagues long instead of 1160, which that sea had always before that remarkable æra.

ADDITIONAL NOTES.

Page 153. Note 239.

AS Bundar-Lari on the eastern branch of the Indus, and Lari-bundar on the western, appear to form a distinction in European accounts only, may it not be conjectured that both have a reference to Lari, or Loheri, a town belonging to the Doo-ab of Behker? and that Bundar, expressing a *port*, may be common to both branches, one forming the *eastern port* of Loheri and the other the *western*? Loheri is either the same as Tekier, or else a place somewhat lower than Tekier, at the bottom of the Doo-ab of Behker, as Sekier, written Sucker, Sungar, and Sengueré, is at the top. This likewise affords ground for conjecture, that the Nulla Sunkra, or Sengueré, the eastern channel, may assume its name from conducting the navigation to Sunkra, Suckor, or Sekier.

Page 276. Note 270.

In the History of the Discovery of India, by Manuel de Faria y Soufa (English edition 1694, vol. i. p. 27.), it appears, that previous to Gama's expedition, Peter de Covillam and Alfonso de Payva had been sent to Alexandria; and that Covillam had passed by the Red Sea to the coast of Malabar, who, though he never returned himself (being detained in Abyffinia), yet sent an account of his discoveries by Lamego, a Jew, to the Court of Lisbon. This is worthy of remark, as it proves that the Portuguese pursued the discovery of India by the route first designed by Alexander, accom-

plished by the Ptolemies, completed by the Romans, and continued by the Arabian khalifs and foldans of Egypt. It was the trade of the Venetians to Alexandria, that the Portuguese were endeavouring to rival, and finally destroyed by the discovery of the passage round the Cape of Good Hope.

Page 478.

Upon the distances of Icarus and Tylos it is to be remarked, that the account is taken, not from the Journal of Nearchus, but from Ptolemy and Aristobulus; it is possible, therefore, that both these authors reckoned by the Olympian stadium, and not the short stadium of Nearchus. If this conjecture be allowable, it will double the distance of both islands, bringing Icarus not far from its true position, and giving the distance to Tylos correctly.

THE END.



E R R A T A.

- Page 24. line 23. *for Hydrastes read Hydraotes.*
 34. note 70, line 1. *for οπαδῆ read ὀπαδῆ.*
 45. line 3. *for scite read site passim.*
 48. — 14. *for Ptolemy read Ptolemy.*
 51. — 12. *for Krocala read Krokala passim.*
 69. note 4, line 2. *for Kuttriri read Kutteri.*
 81. line 3d from the bottom, *for A-chen-ises read A-khen-ises.*
 97. — 16. *for plain read plane.*
 123. — 3d from the bottom, *for th read the.*
ibid. note 159, line 2. *for in read is.*
 141. line 18. *for in read into.*
 142. — 10. *for rains read ruins.*
 145. — 7. *for Gedrosia read Gadrosia.*
 183. — 3d from the bottom, *for Mr. Rennell read Major Rennell passim.*
 219. note 142, col. 2. line 3. *for witten read written.*
 228. line 2d from the bottom, *for and from Ferro read add from Ferro.*
 240. — 22. *for Kidge . . Kidge read Kié . . Kié.*
 256. note 230, line 2, *for τῆ γῆ read τῇ γῇ.*
 275. line 4. *for to eastward read to the eastward.*
 278. note 279, line 5th from the bottom, *for more than half a degree read near a degree.*
 281. line 9. *for thought his read though this.*
 311. note 77, line 7. *for βέλομας read βέλομας.*
 320. note 100, line ult. *for Bahr-ain read Bahr-ein passim.*
 328. line 12. *for of Bassidu read off Bassidu.*
 354. — 14. *for latitude 28° 4' . . 30° 6' read latitude 21° 54' . . 35° 15'.*
 358. — 4. *for Shiras read Shiraz passim.*
ibid. — 15. *after capital of the province add in Timour's age.*
 386. note 322, line 2. *for ingenious read ingenuous.*
 422. line 5. *for orthography read orthography.*
 434. note 487, line 1. *for orinimates read originates.*
 462. line 17. *for the separate narrative read the narrative.*

An error which affects the series of days occurs p. 36, where the date assumed is October 2 instead of October 1. This is accounted for, and corrected p. 495, Appendix.

There are likewise some oversights in regard to punctuation.

DIRECTIONS to the BOOKBINDER.

Place the Head of ALEXANDER to front the Title-page.

[N. B. This Head is engraved from a Macedonian coin of the age of Severus, and is believed to be a copy from a bust of Alexander. It is remarkable that Alexander's own coins do not bear his image, for his gold coins have the head of Minerva, and his silver the head of Hercules.]

This coin is of brass, and forms part of the valuable collection of the late Dr. Hunter; the engraving was taken by the permission of Dr. Combe, for which favour he is requested to accept the best thanks of the Author.

Inscription on the front—ALEXANDER.

on the reverse—THE COMMONWEALTH OF MACEDON.

The letters B. N. E. intimate, that Macedon was one of the Roman provinces styled Neocoræ; that is, had the privilege of being allowed to erect a temple in honour of one of the Roman Emperors. Those provinces, which had this privilege repeated, marked it by a B. Vaillant. Numismat. Græc. p. 216. Dr. Combe.

The sentence under the medallion is from Quint. Curtius, Book ix. c. 6.

MAPS and CHARTS.

- I. General Map from d'Anville—to front Book I.
- II. Map; sketch of the Indus—to front Book II.
- III. Two Charts.
 - Chart N^o I. by Mr. Dalrymple, of the coast of Mekran, from the Indus to the Gulph of Persia—to front Book III.
 - Chart N^o II. by Mr. Dalrymple, of the Gulph of Persia—to front Book IV.
- IV. Sketch by Captain Blair—to front p. 253.
- V. Map of the Euphrates, Tigris, Susiana, &c.—to front the Sequel.

[N. B. These two Charts are from actual surveys of Commodore Robinson, Lieutenants Porter, Blair, M'Cluer, Mascal, &c. with the ancient names added.]



